



West Lake Landfill: data for large-format figures
Dan Gravatt to: colin.willits

01/04/2013 01:33 PM

Colin,

Attached is most of the data for the figures we discussed under the recent Task Order.

- In the file "West Lake 2012 radium data for public meeting figures.pdf", I need to have the *Combined Radium 226 + 228* results for total radium (sample ID ends in "TOT"), that exceed 5 pCi/L plotted on one of the large airphoto-based figures we discussed, in the call-out boxes attached to the appropriate wells. Some wells have duplicate results; use the higher of the two in the call-out. There should be 25 wells with total radium over 5 pCi/L.
- For the other large airphoto-based figure, I'm still working on the data set. It will be much smaller than the one above, and I'll send it to you ASAP.
- For the third figure, see the file "West Lake Gamma Scan downhole data.xlsx" in the tab "Data for printing". I need the contents of this tab printed on a 34*44 foam-core board. You may need to adjust font sizes, spacing of columns, etc to format it properly at that size for readability, so use your best judgement and send me a draft version of what you come up with.

Call with any questions.

Sincerely,

Daniel R. Gravatt, PG
US EPA Region 7 SUPR / MOKS
11201 Renner Boulevard, Lenexa, KS 66219
Phone (913) 551-7324

Principles and integrity are expensive, but they are among the very few things worth having.



West Lake 2012 radium data for public meeting figures.pdf West Lake Gamma Scan downhole data.xlsx

The following Attachments are
available only on CD
Gamma Scan Downhole
Data.xls

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Superfund

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Table 8: Summary of Radium Isotope Results from Additional OU-1 Groundwater Sampling

Sample ID	Sample Date	FINAL						FINAL						Combined Radium 226 + 228	Combined Radium relative to 5 pCi/L MCL
		Analyte	Result	CSU	MDA	Q	Analyte	Result	CSU	MDA	Q				
S-5 TOT	8/14/12	Radium-226	0.67	0.61	0.63	J	Radium-228	2.25	1.39	2.51	UJ	0.67	*	Less Than MCL	
S-8 TOT	8/9/12	Radium-226	0.65	0.35	0.26	J	Radium-228	1.70	0.83	1.39	J+	2.34		Less Than MCL	
S-10 TOT	8/8/12	Radium-226	0.14	0.18	0.29	U	Radium-228	0.55	0.60	1.19	UJ	Non-Detect		Less Than MCL	
S-61 TOT	8/7/12	Radium-226	0.55	0.30	0.26	J	Radium-228	0.80	0.68	1.30	U	0.55	*	Less Than MCL	
S-82 TOT	8/10/12	Radium-226	3.11	1.03	0.34		Radium-228	6.89	1.94	1.83	J	10.00		Exceeds MCL	
S-84 TOT	8/6/12	Radium-226	1.29	0.52	0.25		Radium-228	1.98	0.95	1.59	J	3.26		Less Than MCL	
I-4 TOT	8/14/12	Radium-226	2.83	0.98	0.39		Radium-228	3.68	1.45	2.15	J	6.51		Exceeds MCL	
I-9 TOT	8/14/12	Radium-226	2.35	0.80	0.19		Radium-228	4.48	1.35	1.40		6.83		Exceeds MCL	
I-9 TOT (DUP)	8/14/12	Radium-226	2.22	0.75	0.18		Radium-228	3.81	1.36	1.84		6.03		Exceeds MCL	
I-11 TOT	8/8/12	Radium-226	1.31	0.52	0.22		Radium-228	3.55	1.11	1.26		4.86		Less Than MCL	
I-62 TOT	8/9/12	Radium-226	0.83	0.38	0.20	J	Radium-228	0.75	0.68	1.33	UJ+	0.83	*	Less Than MCL	
I-65 TOT	8/6/12	Radium-226	0.88	0.41	0.25		Radium-228	2.73	1.02	1.45	J	3.61		Less Than MCL	
I-66 TOT	8/10/12	Radium-226	0.26	0.22	0.24	J	Radium-228	1.24	0.82	1.51	UJ	0.26	*	Less Than MCL	
I-67 TOT	8/10/12	Radium-226	0.60	0.36	0.29	J	Radium-228	0.46	0.69	1.41	U	0.60	*	Less Than MCL	
I-68 TOT	8/6/12	Radium-226	2.12	0.72	0.22		Radium-228	2.60	1.06	1.61	J	4.72		Less Than MCL	
I-73 TOT	8/4/12	Radium-226	0.95	0.42	0.15		Radium-228	1.17	0.85	1.59	U	0.95	*	Less Than MCL	
D-3 TOT	8/8/12	Radium-226	4.17	1.29	0.35		Radium-228	6.05	1.66	1.42		10.22		Exceeds MCL	
D-3 TOT (DUP)	8/8/12	Radium-226	2.52	0.88	0.30	J	Radium-228	4.13	1.21	1.27		6.65		Exceeds MCL	
D-6 TOT	8/7/12	Radium-226	3.39	1.05	0.23		Radium-228	4.76	1.38	1.31	J	8.15		Exceeds MCL	
D-6 TOT (DUP)	8/7/12	Radium-226	3.26	1.03	0.26		Radium-228	3.24	1.11	1.46		6.50		Exceeds MCL	
D-12 TOT	8/8/12	Radium-226	0.80	0.39	0.25		Radium-228	1.13	0.63	1.10	J	1.93		Less Than MCL	
D-13 TOT	8/10/12	Radium-226	1.41	0.54	0.23		Radium-228	4.49	1.35	1.45	J+	5.90		Exceeds MCL	
D-13 TOT (DUP_	8/10/12	Radium-226	0.63	0.34	0.30	J	Radium-228	2.04	0.94	1.52	J	2.67		Less Than MCL	
D-14 TOT	8/10/12	Radium-226	2.18	0.75	0.33	J	Radium-228	2.99	1.34	2.15	J+	5.17		Exceeds MCL	
D-81 TOT	8/9/12	Radium-226	0.63	0.33	0.21		Radium-228	3.41	1.10	1.26	J+	4.03		Less Than MCL	
D-83 TOT	8/9/12	Radium-226	2.80	0.93	0.25	J	Radium-228	3.21	1.07	1.33	J+	6.01		Exceeds MCL	
D-85 TOT	8/6/12	Radium-226	6.84	1.92	0.31	J	Radium-228	6.95	2.45	3.30	J	13.79		Exceeds MCL	
D-87 TOT	8/1/12	Radium-226	1.70	0.60	0.24	J+	Radium-228	3.99	1.15	1.09	J+	5.69		Exceeds MCL	
D-93 TOT	8/14/12	Radium-226	1.22	0.53	0.23		Radium-228	1.81	0.97	1.68	J	3.03		Less Than MCL	
LR-100 TOT	8/13/12	Radium-226	0.54	0.34	0.35	J	Radium-228	1.06	1.01	1.97	UJ	0.54	*	Less Than MCL	

Table 8: Summary of Radium Isotope Results from Additional OU-1 Groundwater Sampling

Sample ID	Sample Date	FINAL						FINAL						Combined Radium 226 + 228	Combined Radium relative to 5 pCi/L MCL
		Analyte	Result	CSU	MDA	Q	Analyte	Result	CSU	MDA	Q				
LR-103 TOT	8/13/12	Radium-226	1.44	0.62	0.32		Radium-228	1.03	1.01	1.98	UJ	1.44	*	Less Than MCL	
LR-104 TOT	8/13/12	Radium-226	0.53	0.34	0.36	J	Radium-228	2.14	1.00	1.65		2.67		Less Than MCL	
LR-104 TOT (DUP)	8/13/12	Radium-226	0.52	0.33	0.31	J	Radium-228	1.16	0.77	1.41	U	0.52	*	Less Than MCL	
LR-105 TOT	8/1/12	Radium-226	0.91	0.44	0.29	J+	Radium-228	0.76	0.95	1.91	UJ+	0.91	*	Less Than MCL	
MW-102 TOT	8/7/12	Radium-226	0.53	0.29	0.15	J	Radium-228	1.31	0.80	1.45	U	0.53	*	Less Than MCL	
MW-103 TOT	8/11/12	Radium-226	5.44	1.57	0.37	J	Radium-228	5.36	1.83	2.38	J	10.79		Exceeds MCL	
MW-104 TOT	8/9/12	Radium-226	1.59	0.65	0.29	J	Radium-228	3.34	1.44	2.26	J+	4.93		Less Than MCL	
MW-1204 TOT	8/2/12	Radium-226	4.24	1.24	0.21	J	Radium-228	2.44	0.99	1.48		6.68		Exceeds MCL	
PZ-100-KS TOT	8/16/12	Radium-226	0.55	0.31	0.22	J	Radium-228	0.70	1.04	2.13	U	0.55	*	Less Than MCL	
PZ-100-SD TOT	7/31/12	Radium-226	2.74	0.88	0.31		Radium-228	1.03	0.60	1.05	U	2.74	*	Less Than MCL	
PZ-100-SS TOT	7/31/12	Radium-226	2.95	0.89	0.21	J	Radium-228	1.28	0.65	1.09	J	4.23		Less Than MCL	
PZ-101-SS TOT	8/7/12	Radium-226	12.52	2.99	0.24	J	Radium-228	3.68	1.11	1.17		16.19		Exceeds MCL	
PZ-102R-SS TOT	8/13/12	Radium-226	2.65	0.82	0.15	J	Radium-228	1.87	0.76	1.14		4.52		Less Than MCL	
PZ-102-SS TOT	8/13/12	Radium-226	5.96	1.76	0.38	J	Radium-228	3.42	1.52	2.43	J	9.38		Exceeds MCL	
PZ-103-SS TOT	8/7/12	Radium-226	4.72	1.39	0.22		Radium-228	1.34	0.73	1.25	J	6.06		Exceeds MCL	
PZ-104-KS TOT	8/13/12	Radium-226	0.17	0.18	0.20	U	Radium-228	0.29	1.08	2.28	UJ	Non-Detect		Less Than MCL	
PZ-104-SD TOT	8/1/12	Radium-226	4.50	1.26	0.18		Radium-228	0.52	0.89	1.83	U	4.50	*	Less Than MCL	
PZ-104-SS TOT	8/1/12	Radium-226	1.62	0.57	0.14		Radium-228	1.47	0.79	1.35	J	3.09		Less Than MCL	
PZ-105-SS TOT	8/1/12	Radium-226	1.84	0.62	0.18	J+	Radium-228	1.01	0.65	1.17	UJ+	1.84	*	Less Than MCL	
PZ-106-KS TOT	8/14/12	Radium-226	0.23	0.24	0.33	U	Radium-228	1.46	0.99	1.83	UJ	Non-Detect		Less Than MCL	
PZ-106-SD TOT	7/31/12	Radium-226	1.06	0.44	0.18		Radium-228	0.94	0.62	1.14	U	1.06	*	Less Than MCL	
PZ-106-SS TOT	7/31/12	Radium-226	3.93	1.13	0.18		Radium-228	1.27	0.70	1.22	J	5.20		Exceeds MCL	
PZ-107-SS TOT	8/4/12	Radium-226	6.33	1.73	0.33		Radium-228	2.62	1.13	1.78	J	8.95		Exceeds MCL	
PZ-109-SS TOT	8/2/12	Radium-226	2.58	0.83	0.22	J	Radium-228	2.72	0.98	1.28	J	5.30		Exceeds MCL	
PZ-110-SS TOT	8/2/12	Radium-226	4.38	1.18	0.21	J	Radium-228	2.21	0.88	1.27		6.59		Exceeds MCL	
PZ-111-KS TOT	8/13/12	Radium-226	0.63	0.34	0.21	J	Radium-228	0.96	0.84	1.62	UJ	0.63	*	Less Than MCL	
PZ-111-SD TOT	8/1/12	Radium-226	1.34	0.52	0.21	J+	Radium-228	0.34	0.70	1.45	UJ+	1.34	*	Less Than MCL	
PZ-112-AS TOT	8/8/12	Radium-226	2.76	1.01	0.40	J	Radium-228	2.86	1.03	1.42	J	5.62		Exceeds MCL	
PZ-113-AS TOT	8/8/12	Radium-226	0.64	0.36	0.27		Radium-228	1.37	0.84	1.53	U	0.64	*	Less Than MCL	
PZ-113-SS TOT	8/4/12	Radium-226	1.91	0.67	0.21		Radium-228	-0.32	0.88	1.91	U	1.91	*	Less Than MCL	

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Sample ID	Sample Date	FINAL						FINAL						Combined Radium 226 + 228	Combined Radium relative to 5 pCi/L MCL
		Analyte	Result	CSU	MDA	Q	Analyte	Result	CSU	MDA	Q				
PZ-113-AD TOT	8/3/12	Radium-226	3.41	1.19	0.44	J	Radium-228	7.71	2.05	1.62	J	11.12	*	Exceeds MCL	
PZ-113-AD TOT (DUP)	8/3/12	Radium-226	1.05	0.51	0.30	J	Radium-228	1.01	0.68	1.26	U	1.05	*	Less Than MCL	
PZ-114-AS TOT	7/31/12	Radium-226	0.41	0.25	0.22	J	Radium-228	0.82	0.78	1.52	UJ	0.41	*	Less Than MCL	
PZ-115-SS TOT	7/31/12	Radium-226	6.20	1.63	0.21		Radium-228	0.59	0.64	1.28	U	6.20	*	Exceeds MCL	
PZ-116-SS TOT	8/3/12	Radium-226	0.54	0.32	0.23	J	Radium-228	0.83	0.67	1.28	U	0.54	*	Less Than MCL	
PZ-200-SS TOT	8/2/12	Radium-226	4.94	1.42	0.37	J	Radium-228	2.80	1.01	1.37		7.74		Exceeds MCL	
PZ-200-SS TOT (DUP)	8/2/12	Radium-226	4.69	1.32	0.23	J	Radium-228	1.95	0.90	1.46		6.65		Exceeds MCL	
PZ-201A-SS TOT	8/1/12	Radium-226	0.31	0.22	0.20	J+	Radium-228	0.87	0.67	1.27	UJ+	0.31	*	Less Than MCL	
PZ-201A-SS TOT (DUP)	8/1/12	Radium-226	0.29	0.17	0.09	J+	Radium-228	1.40	0.77	1.33	J+	1.69		Less Than MCL	
PZ-202-SS TOT	8/2/12	Radium-226	1.97	0.70	0.24	J	Radium-228	2.61	1.02	1.47		4.58		Less Than MCL	
PZ-203-SS TOT	8/1/12	Radium-226	0.95	0.40	0.25	J+	Radium-228	1.89	0.72	1.01	J+	2.84		Less Than MCL	
PZ-204A-SS TOT	8/2/12	Radium-226	2.34	0.78	0.21	J	Radium-228	0.19	0.93	1.97	UJ	2.34	*	Less Than MCL	
PZ-204-SS TOT	8/3/12	Radium-226	1.10	0.54	0.40		Radium-228	0.63	0.77	1.55	U	1.10	*	Less Than MCL	
PZ-205-AS TOT	8/3/12	Radium-226	1.20	0.51	0.28		Radium-228	1.51	0.82	1.43	J	2.70		Less Than MCL	
PZ-205-SS TOT	8/3/12	Radium-226	1.73	0.64	0.24	J	Radium-228	1.30	0.92	1.72	UJ	1.73	*	Less Than MCL	
PZ-206-SS TOT	8/7/12	Radium-226	1.44	0.52	0.22		Radium-228	1.12	0.72	1.31	U	1.44	*	Less Than MCL	
PZ-207-AS TOT	8/8/12	Radium-226	0.66	0.36	0.24	J	Radium-228	2.50	0.89	1.20		3.16		Less Than MCL	
PZ-208-SS TOT	8/2/12	Radium-226	0.83	0.37	0.18	J+	Radium-228	0.26	0.76	1.58	UJ+	0.83	*	Less Than MCL	
PZ-302-AI TOT	8/9/12	Radium-226	1.08	0.48	0.25		Radium-228	2.22	0.85	1.20	J+	3.30		Less Than MCL	
PZ-303-AS TOT	8/10/12	Radium-226	0.63	0.35	0.25	J	Radium-228	3.82	1.32	1.75	J+	4.46		Less Than MCL	
PZ-304-AI TOT	8/10/12	Radium-226	1.52	0.69	0.51		Radium-228	4.84	1.34	1.12		6.35		Exceeds MCL	
PZ-304-AS TOT	8/10/12	Radium-226	2.19	0.84	0.35		Radium-228	3.38	1.13	1.39	J	5.56		Exceeds MCL	
PZ-305-AI TOT	8/8/12	Radium-226	2.18	0.79	0.27		Radium-228	2.10	0.88	1.35	J	4.28		Less Than MCL	
S-5 DIS	8/14/12	Radium-226	1.29	0.85	0.90	J	Radium-228	2.03	1.25	2.26	UJ	1.29	*	Less Than MCL	
S-8 DIS	8/9/12	Radium-226	0.56	0.32	0.25	J	Radium-228	2.02	0.80	1.16	J+	2.58		Less Than MCL	
S-10 DIS	8/8/12	Radium-226	0.06	0.13	0.25	U	Radium-228	0.67	0.61	1.18	UJ	Non-Detect		Less Than MCL	
S-61 DIS	8/7/12	Radium-226	0.35	0.23	0.20	J	Radium-228	1.26	0.72	1.25	J	1.61		Less Than MCL	
S-82 DIS	8/10/12	Radium-226	1.32	0.57	0.31		Radium-228	6.08	1.72	1.62	J	7.40		Exceeds MCL	
S-84 DIS	8/6/12	Radium-226	0.51	0.32	0.24	J	Radium-228	1.67	1.02	1.83	UJ	0.51	*	Less Than MCL	

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Sample ID	Sample Date	FINAL						FINAL						Combined Radium 226 + 228	Combined Radium relative to 5 pCi/L MCL
		Analyte	Result	CSU	MDA	Q	Analyte	Result	CSU	MDA	Q				
I-4 DIS	8/14/12	Radium-226	1.94	0.72	0.27		Radium-228	4.23	1.40	1.73			6.17		Exceeds MCL
I-9 DIS	8/14/12	Radium-226	2.14	0.76	0.20		Radium-228	4.21	1.40	1.75	J		6.34		Exceeds MCL
I-9 DIS (DUP)	8/14/12	Radium-226	2.38	0.80	0.18		Radium-228	5.06	1.59	1.82	J		7.44		Exceeds MCL
I-11 DIS	8/8/12	Radium-226	1.01	0.45	0.22		Radium-228	2.99	1.03	1.34			3.99		Less Than MCL
I-62 DIS	8/9/12	Radium-226	0.32	0.22	0.20	J	Radium-228	2.03	0.80	1.16	J+		2.35		Less Than MCL
I-65 DIS	8/6/12	Radium-226	0.22	0.20	0.25	U	Radium-228	0.96	0.73	1.38	UJ		Non-Detect		Less Than MCL
I-66 DIS	8/10/12	Radium-226	0.12	0.17	0.28	UJ	Radium-228	0.46	0.73	1.49	U		Non-Detect		Less Than MCL
I-67 DIS	8/10/12	Radium-226	0.55	0.33	0.27	J	Radium-228	0.64	0.68	1.34	U		0.55	*	Less Than MCL
I-68 DIS	8/6/12	Radium-226	0.52	0.30	0.23	J	Radium-228	3.46	1.09	1.24			3.98		Less Than MCL
I-73 DIS	8/4/12	Radium-226	0.71	0.39	0.27	J	Radium-228	0.97	0.97	1.92	UJ		0.71	*	Less Than MCL
D-3 DIS	8/8/12	Radium-226	2.55	0.91	0.31		Radium-228	5.06	1.50	1.54	J		7.61		Exceeds MCL
D-3 DIS (DUP)	8/8/12	Radium-226	3.06	1.06	0.39		Radium-228	6.72	1.74	1.15	J		9.78		Exceeds MCL
D-6 DIS	8/7/12	Radium-226	2.54	0.83	0.24		Radium-228	3.71	1.15	1.29	J		6.25		Exceeds MCL
D-6 DIS (DUP)	8/7/12	Radium-226	3.09	0.99	0.30	J	Radium-228	3.81	1.12	1.09			6.90		Exceeds MCL
D-12 DIS	8/8/12	Radium-226	0.68	0.36	0.22		Radium-228	0.51	0.59	1.17	UJ		0.68	*	Less Than MCL
D-13 DIS	8/10/12	Radium-226	1.21	0.49	0.17		Radium-228	2.19	0.90	1.36	J+		3.40		Less Than MCL
D-13 DIS (DUP)	8/10/12	Radium-226	0.93	0.41	0.22	J	Radium-228	5.34	1.46	1.21			6.27		Exceeds MCL
D-81 DIS	8/9/12	Radium-226	0.62	0.33	0.19	J	Radium-228	2.04	0.88	1.37	J+		2.66		Less Than MCL
D-83 DIS	8/9/12	Radium-226	3.23	1.00	0.27		Radium-228	3.48	1.15	1.42	J+		6.70		Exceeds MCL
D-85 DIS	8/6/12	Radium-226	1.65	0.65	0.28		Radium-228	2.80	1.04	1.45	J		4.45		Less Than MCL
D-87 DIS	8/1/12	Radium-226	1.42	0.56	0.20	J+	Radium-228	3.93	1.19	1.27	J+		5.35		Exceeds MCL
D-93 DIS	8/14/12	Radium-226	1.79	0.66	0.25		Radium-228	3.45	1.34	2.00			5.24		Exceeds MCL
LR-100 DIS	8/13/12	Radium-226	0.83	0.40	0.28		Radium-228	0.89	0.92	1.82	UJ		0.83	*	Less Than MCL
LR-103 DIS	8/13/12	Radium-226	1.10	0.51	0.24		Radium-228	1.62	0.92	1.62	J		2.73		Less Than MCL
LR-104 DIS	8/13/12	Radium-226	0.48	0.33	0.33	J	Radium-228	1.62	0.86	1.49	J		2.10		Less Than MCL
LR-104 DIS (DUP)	8/13/12	Radium-226	0.71	0.37	0.25	J	Radium-228	1.21	0.82	1.52	UJ		0.71	*	Less Than MCL
LR-105 DIS	8/1/12	Radium-226	1.14	0.47	0.20	J+	Radium-228	1.81	0.83	1.34	J+		2.95		Less Than MCL
MW-102 DIS	8/7/12	Radium-226	0.86	0.41	0.24		Radium-228	0.68	0.67	1.31	U		0.86	*	Less Than MCL
MW-103 DIS	8/11/12	Radium-226	0.27	0.21	0.21	J	Radium-228	4.32	1.27	1.28			4.59		Less Than MCL
MW-104 DIS	8/9/12	Radium-226	0.46	0.29	0.19	J	Radium-228	0.70	0.80	1.61	UJ+		0.46	*	Less Than MCL

Table 8: Summary of Radium Isotope Results from Additional OU-1 Groundwater Sampling

Sample ID	Sample Date	FINAL						FINAL						Combined Radium 226 + 228	Combined Radium relative to 5 pCi/L MCL
		Analyte	Result	CSU	MDA	Q	Analyte	Result	CSU	MDA	Q				
MW-1204 DIS	8/2/12	Radium-226	2.79	0.88	0.27	J	Radium-228	1.84	0.87	1.43		4.63		Less Than MCL	
PZ-100-KS DIS	8/16/12	Radium-226	0.21	0.21	0.25	U	Radium-228	-0.04	1.27	2.73	UJ	Non-Detect		Less Than MCL	
PZ-100-SD DIS	7/31/12	Radium-226	2.69	0.87	0.28		Radium-228	0.37	0.67	1.37	U	2.69	*	Less Than MCL	
PZ-100-SS DIS	7/31/12	Radium-226	3.95	1.15	0.27		Radium-228	1.12	0.72	1.33	U	3.95	*	Less Than MCL	
PZ-101-SS DIS	8/7/12	Radium-226	28.87	6.55	0.24		Radium-228	3.13	1.10	1.47	J	32.01		Exceeds MCL	
PZ-102R-SS DIS	8/13/12	Radium-226	3.62	1.08	0.25		Radium-228	1.69	0.88	1.52	J	5.32		Exceeds MCL	
PZ-102-SS DIS	8/13/12	Radium-226	3.63	1.06	0.20	J	Radium-228	2.12	0.89	1.38		5.75		Exceeds MCL	
PZ-103-SS DIS	8/7/12	Radium-226	3.09	1.00	0.24		Radium-228	1.96	0.83	1.26	J	5.05		Exceeds MCL	
PZ-104-KS DIS	8/13/12	Radium-226	0.28	0.23	0.24	J	Radium-228	0.35	1.12	2.36	UJ	0.28	*	Less Than MCL	
PZ-104-SD DIS	8/1/12	Radium-226	9.74	2.73	0.46	J	Radium-228	4.68	1.59	2.02	J	14.42		Exceeds MCL	
PZ-104-SS DIS	8/1/12	Radium-226	1.60	0.58	0.21	J	Radium-228	0.92	0.62	1.15	UJ	1.60	*	Less Than MCL	
PZ-105-SS DIS	8/1/12	Radium-226	1.92	0.65	0.28	J+	Radium-228	1.14	0.61	1.06	J+	3.06		Less Than MCL	
PZ-106-KS DIS	8/14/12	Radium-226	0.27	0.22	0.24	J	Radium-228	0.46	0.81	1.66	U	0.27	*	Less Than MCL	
PZ-106-SD DIS	7/31/12	Radium-226	1.28	0.52	0.23		Radium-228	1.08	0.71	1.30	U	1.28	*	Less Than MCL	
PZ-106-SS-DIS	7/31/12	Radium-226	2.90	0.91	0.28		Radium-228	0.90	0.76	1.47	U	2.90	*	Less Than MCL	
PZ-107-SS DIS	8/4/12	Radium-226	5.02	1.39	0.22	J	Radium-228	2.28	0.88	1.27		7.30		Exceeds MCL	
PZ-109-SS DIS	8/2/12	Radium-226	2.35	0.80	0.35	J	Radium-228	2.06	0.90	1.43		4.41		Less Than MCL	
PZ-110-SS DIS	8/2/12	Radium-226	5.01	1.36	0.19	J	Radium-228	2.11	0.90	1.39		7.13		Exceeds MCL	
PZ-111-KS DIS	8/13/12	Radium-226	0.32	0.25	0.22	J	Radium-228	0.09	0.76	1.61	UJ	0.32	*	Less Than MCL	
PZ-111-SD DIS	8/1/12	Radium-226	1.26	0.47	0.15	J+	Radium-228	1.37	0.86	1.57	UJ+	1.26	*	Less Than MCL	
PZ-112-AS DIS	8/8/12	Radium-226	3.08	1.04	0.36		Radium-228	2.19	0.91	1.39		5.27		Exceeds MCL	
PZ-113-AS DIS	8/8/12	Radium-226	0.73	0.42	0.39	J	Radium-228	1.24	0.74	1.33	U	0.73	*	Less Than MCL	
PZ-113-SS DIS	8/4/12	Radium-226	1.94	0.64	0.15	J	Radium-228	1.93	0.93	1.54		3.87		Less Than MCL	
PZ-113-AD DIS	8/3/12	Radium-226	4.51	1.40	0.31	J	Radium-228	7.70	1.98	1.26		12.20		Exceeds MCL	
PZ-113-AD DIS (DUP)	8/3/12	Radium-226	1.21	0.56	0.24	J	Radium-228	1.29	0.86	1.60	UJ	1.21	*	Less Than MCL	
PZ-114-AS DIS	7/31/12	Radium-226	0.72	0.36	0.19		Radium-228	1.59	0.84	1.45	J	2.30		Less Than MCL	
PZ-115-SS DIS	7/31/12	Radium-226	6.49	1.71	0.33		Radium-228	0.92	0.67	1.26	U	6.49	*	Exceeds MCL	
PZ-116-SS DIS	8/3/12	Radium-226	0.19	0.24	0.39	UJ	Radium-228	-0.14	0.68	1.47	U	Non-Detect		Less Than MCL	
PZ-200-SS DIS	8/2/12	Radium-226	3.12	0.97	0.28	J	Radium-228	3.03	1.07	1.44		6.15		Exceeds MCL	
PZ-200-SS DIS (DUP)	8/2/12	Radium-226	4.50	1.28	0.17	J	Radium-228	1.20	0.91	1.73	UJ	4.50	*	Less Than MCL	

Table 8: Summary of Radium Isotope Results from Additional OU-1 Groundwater Sampling

Sample ID	Sample Date	FINAL						FINAL						Combined Radium 226 + 228	Combined Radium relative to 5 pCi/L MCL
		Analyte	Result	CSU	MDA	Q	Analyte	Result	CSU	MDA	Q				
PZ-201A-SS DIS	8/1/12	Radium-226	0.45	0.27	0.23	J+	Radium-228	0.80	0.67	1.29	UJ+	0.45	*	Less Than MCL	
PZ-201A-SS DIS (DUP)	8/1/12	Radium-226	0.15	0.15	0.18	UJ+	Radium-228	1.57	0.84	1.45	J+	1.57	*	Less Than MCL	
PZ-202-SS DIS	8/2/12	Radium-226	0.67	0.37	0.28	J	Radium-228	2.02	0.91	1.46		2.69		Less Than MCL	
PZ-203-SS DIS	8/1/12	Radium-226	1.08	0.45	0.23	J+	Radium-228	0.95	0.67	1.24	UJ+	1.08	*	Less Than MCL	
PZ-204A-SS DIS	8/2/12	Radium-226	0.72	0.37	0.24	J	Radium-228	1.48	0.84	1.48	J	2.20		Less Than MCL	
PZ-204-SS DIS	8/3/12	Radium-226	1.41	0.62	0.35		Radium-228	1.02	0.82	1.58	UJ	1.41	*	Less Than MCL	
PZ-205-AS DIS	8/3/12	Radium-226	1.33	0.57	0.24	J	Radium-228	0.88	0.76	1.47	U	1.33	*	Less Than MCL	
PZ-205-SS DIS	8/3/12	Radium-226	1.54	0.59	0.22	J	Radium-228	1.46	0.82	1.45	J	3.00		Less Than MCL	
PZ-206-SS DIS	8/7/12	Radium-226	0.91	0.40	0.20		Radium-228	1.56	0.76	1.26	J	2.47		Less Than MCL	
PZ-207-AS DIS	8/8/12	Radium-226	0.73	0.38	0.26	J	Radium-228	0.97	0.71	1.33	U	0.73	*	Less Than MCL	
PZ-208-SS DIS	8/2/12	Radium-226	0.52	0.27	0.14	J+	Radium-228	1.90	0.88	1.41	J+	2.42		Less Than MCL	
PZ-302-AI DIS	8/9/12	Radium-226	0.47	0.29	0.25	J	Radium-228	1.42	0.70	1.17	J+	1.90		Less Than MCL	
PZ-303-AS DIS	8/10/12	Radium-226	0.36	0.23	0.20	J	Radium-228	2.44	1.26	2.15	J+	2.80		Less Than MCL	
PZ-304-AI DIS	8/10/12	Radium-226	1.93	0.76	0.35	J	Radium-228	2.76	1.01	1.44		4.69		Less Than MCL	
PZ-304-AS DIS	8/10/12	Radium-226	1.61	0.68	0.32		Radium-228	2.46	0.95	1.36	J	4.07		Less Than MCL	
PZ-305-AI DIS	8/8/12	Radium-226	0.70	0.43	0.42	J	Radium-228	0.27	0.72	1.50	UJ	0.70	*	Less Than MCL	

Notes:

All values are in units of picoCuries per liter (pCi/l)

DIS = dissolved sample (field filtered sample); TOT = total sample (unfiltered sample)

DUP = Duplicate samples; Field duplicates were collected from the following locations: DUP 01 = PZ-201A-SS, DUP 02 = PZ-200-SS,

DUP 03 = PZ-113-Ad, DUP-04 = D-6, DUP-05 = D-3, DUP 06 = D-13, DUP 07 = LR-104, and DUP 08 = I-9.

CU = Counting Uncertainty; CSU = Combined Standard Uncertainty (2-sigma); MDA = Minimum Detectable Activity

Data Validation Qualifiers (Final Q) include: U = Non-detect at the reported value,

UJ = Non-Detect at the estimated reported value, UJ+ = Non-Detect at the estimated reported value which may be biased high,

J = estimated result; J+ = estimated result which may be biased high

Combined Radium-226 plus Radium-228 = the sum of the Ra-226 and Ra-228 results unless one of results was non-detect, in which case only the detected result is shown and the value is flagged with a *.

Non-Detect = neither Radium-226 nor Radium-228 were detected in the sample

MCL = Maximum Contaminant Level for drinking water systems of 5 pCi/l for total Radium-226 plus Radium-228



RE: West Lake Landfill OU-1 boundaries
Muenks, Shawn
to:
'Paul Rosasco'
01/04/2013 03:31 PM
Cc:
Dan Gravatt
Hide Details
From: "Muenks, Shawn" <shawn.muenks@dnr.mo.gov>

To: "Paul Rosasco" <paulrosasco@emsidenver.com>

Cc: Dan Gravatt/R7/USEPA/US@EPA

Paul,

Yes, please send me the AutoCad files. I think I can convert those.

Thanks for the clarification.

Shawn Muenks, P.E.
Missouri Department of Natural Resources
P.O. Box 176, Jefferson City, MO 65102-0176
Ph: (573)751-3107
email: shawn.muenks@dnr.mo.gov

From: Paul Rosasco [mailto:paulrosasco@emsidenver.com]
Sent: Friday, January 04, 2013 3:00 PM
To: Muenks, Shawn
Cc: 'Gravatt, Dan'
Subject: RE: West Lake Landfill OU-1 boundaries

Shawn,

Yes there have been differences in the extent of Areas 1 and 2 and the OU-1 and OU-2 boundaries over the years. To my knowledge there are no official boundaries for Areas 1 and 2. Some of the differences arise from the generalized extents that were defined in the pre-RI/FS documents versus the extents of radionuclide occurrences in Areas 1 and 2 that were determined based on the RI sampling. My suggestion is that you us the versions presented in the Groundwater Report. These should be the same as those presented in the SFS report with the possible exception of the groundwater figures prepared by Herst & Associates. Herst & Associates really does not have any involvement in determining the extent of Areas 1 and 2 and probably used older

drawings to outline Areas 1 and 2 in the groundwater figures. Ward and I did sit down a while back and work out the boundaries of OU-1 and OU-2 as part of the OU-1 and OU-2 coordination effort requested by Dan Wall. I presume he is using those boundaries to defined OU-1 and OU-2.

I do not have GIS files of the boundaries. I can provide you with an AutoCad file of the boundaries (e.g., Figure 1 in the Groundwater Report) if that would help.

From: Muenks, Shawn [<mailto:shawn.muenks@dnr.mo.gov>]
Sent: Friday, January 04, 2013 1:17 PM
To: Rosasco, Paul (paulrosasco@emsidenvver.com)
Cc: Gravatt, Dan (Gravatt.Dan@epamail.epa.gov)
Subject: West Lake Landfill OU-1 boundaries

Paul,

I have been looking at maps of West Lake Landfill for several years now and noticed different boundaries for Area 1 and Area 2 used interchangeably (same goes for OU2 boundaries). Such differences appear in the SFS versus the Groundwater Monitoring Report. I think this discrepancy comes from maps made by EMSI versus Herst. Can you clarify what the official boundaries are supposed to be? My next request is if you have the digital files for these boundaries that I can use in GIS (shapefiles)? I am in kind of a time crunch, trying to put together a map for a briefing. So if you can't get me something by early next week I will stick with what I have which are boundaries depicted in the RI report. But I would still like to have this resolved for future reference.

Thanks,

Shawn Muenks, P.E.
Missouri Department of Natural Resources
P.O. Box 176, Jefferson City, MO 65102-0176
Ph: (573)751-3107
email: shawn.muenks@dnr.mo.gov

West Lake Down-Hole Gamma logging of monitoring wells, November 5-9, 2012, by Dan Gravatt and

Well Name -----> PZ-207-AS PZ-113-SS PZ-113-AD PZ-113-AS D85 S84 I67

Depth, Ft BTOC Reading Reading Reading Reading Reading Reading Reading

150							
149		27					
148		23					
147		24					
146		34					
145		60					
144		73					
143		62					
142		48					
141		111					
140		137					
139		79					
138		85					
137		69					
136		41					
135		52					
134		41					
133		39					
132		49					
131		36					
130		33					
129		37					
128		43					
127		33					
126		21					
125		28					
124		48					
123		81					
122		69					
121		75					
120		135					
119		147					
118		100					
117		68					
116		42					
115		57					
114		45					
113		54					
112		35					
111		34					
110	47	97					
109	47	81					
108	53	104					
107	55	93					
106	54	86					
105	54	87					

104	50	86	
103	42	105	
102	53	88	
101	63	78	
100	61	81	
99	54	75	
98	53	85	
97	48	79	
96	53	73	
95	60	80	
94	39	90	
93	63	84	
92	43	101	
91	47	92	
90	53	79	
89	47	69	
88	37	74	
87	61	64	
86	61	105	
85	48	95	
84	47	107	
83	56	87	
82	51	82	
81	56	96	89
80	70	121	95
79	53	97	91
78	66	110	71
77	41	102	87
76	56	100	91
75	55	106	74
74	62	103	80
73	47	128	79
72	50	94	83
71	60	81	67
70	52	96	78
69	64	100	96
68	60	94	81
67	62	122	79
66	73	111	82
65	51	108	64
64	65	78	99
63	48	104	97
62	55	89	124
61	46	114	116
60	42	85	101
59	60	102	79
58	54	85	81
57	58	71	81
56	56	100	79

55		44	95		97	
54		63	121		74	
53		58	92		71	
52		53	99		74	
51		39	96		75	
50		55	89		88	
49		53	98		101	
48		38	93		78	
47		59	85		92	
46		50	94		96	
45		42	96		71	
44		58	112		89	
43		48	119		83	
42		65	108		92	
41		52	103		68	104
40	72	44	104		82	98
39	73	52	96	69	91	95
38	49	62	94	76	76	87
37	69	48	113	74	89	90
36	79	45	94	88	72	82
35	75	60	106	82	76	95
34	52	51	90	89	68	82
33	36	53	101	92	82	76
32	46	68	105	97	84	62
31	58	68	97	111	85	73
30	83	66	93	114	103	81
29	76	79	100	112	103	79
28	51	90	113	100	104	108
27	63	78	121	118	95	82
26	49	78	180	99	114	119
25	57	83	182	139	130	154
24	78	65	157	119	154	147
23	82	97	162	167	135	180
22	79	73	151	157	159	142
21	98	102	194	164	158	164
20	66	85	199	147	157	137
19	65	77	164	180	164	148
18	70	70	150	160	140	136
17	60	71	172	143	156	150
16	47	82	173	147	136	133
15	47	78	176	171	126	128
14	104	76	187	140	148	118
13	92	76	181	153	152	104
12	65	64	194	168	132	121
11	76	87	168	154	125	125
10	85	81	193	172	106	143
9	70	73	160	146	119	118
8	93	85	165	174	119	110
7	159	98	151	174	127	108
						131

6	211	98	153	148	167	102	155
5	156	75	150	119	180	103	168
4	116	77	127	112	80	74	96
3	69	68	100	111	48	53	80
2	63	80	83	90	52	32	71
1	41	40	35	46	50	46	62
0	74	47	44	43	71	66	81

Note: depths measured by 1-foot interval markings on the NaI sensor's cable, starting with sensor res

Note: readings are for a 6-second count; multiply by 10 to get counts per minute.

extra backgrounds at zero feet ->	49	59	62
Day 1: PZ-207-AS through PZ-113-AS	63	55	58
Day 2: D85 through LR-104	50	38	64
Day 3: PZ-111-KS through PZ-203-SS	53	64	82
Day 4: PZ-100-KS through MW-104	51	53	69
Day 5: PZ-101-SS through PZ-104-SS.	53	83	
	59	65	
	51	71	
	54	59	
	42	63	

Well D14 warm, visibly and audibly leaking methane, obstructed at shallow depth.

We did not get the probe down to the full TD in some wells with dedicated bladder pumps, either due
PZ-106-KS very deep; double cased? Affecting gamma attenuation? Need to check all wells against
Two 50-lb UNIMIN bags of sand at well I62, put detector between them: 52, 51, 65, 53, 55, 58 counts
Old bentonite pile near D87, probe stuck into it: 98, 79, 92 counts in 6-second period.

COLOR CODE FOR WELL CONSTRUCTION: black = stickup (aboveground); blue = bentonite; green
Steel casing or surface completion pipe interval in *italics*.

Well construction interval depths adjusted for the difference between BTOC and BGS as necessary.

Chuck Hooper, following the August, 2012 QAPP

I68	PZ-114-AS	PZ-115-SS	PZ-208-SS	D3	I4	S5	PZ-112-AS
Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading

80

89

68

103

81

		87
		71
25	70	
32	76	
22	69	
46	102	
40	77	
30	98	
21	96	
19	94	
26	108	
34	133	
36	99	
27	100	
25	97	
35	115	
35	107	
36	98	
33	103	
66	96	
59	104	
77	125	
50	122	
38	56	95
44	63	98
44	38	109
56	52	90
43	46	99
46	28	99
48	36	105
84	40	94
47	32	110
48	68	101
73	35	125
45	37	131
34	42	101
42	57	93
31	86	90
45	77	76
40	48	86
38	80	104
48	86	100
33	97	82
29	74	88
46	84	109
30	99	108
29	85	103
56	75	115
44	79	122
		93
		94
		109

	61	49	100	95		
	42	52	96	91		
	52	46	98	116		
	57	70	82	104		
	70	57	90	91		
	51	49	92	84		
	44	53	98	100		
	54	104	104	85		
	51	73	85	100		
	44	40	89	111		
	70	36	100	89		
	61	39	107	96	63	
	52	56	106	108	49	
	54	36	116	105	63	
70	38	28	133	99	60	
76	60	48	98	85	74	
72	47	37	91	111	58	46
74	31	61	114	148	48	70
70	34	56	111	113	68	57
80	31	40	115	74	105	70
79	43	42	124	82	71	69
61	58	36	162	101	55	95
71	43	48	138	107	59	110
78	54	39	174	99	82	111
86	48	44	164	88	46	111
81	47	37	158	67	147	125
83	47	38	141	82	82	149
86	49	38	120	86	166	138
86	61	34	68	86	134	160
92	70	40	76	92	133	137
109	102	45	55	105	116	125
109	99	57	38	103	104	102
108	104	57	35	79	87	140
115	89	63	36	56	104	121
147	102	62	34	66	95	94
126	112	85	62	73	92	88
98	147	61	81	82	74	82
122	123	72	129	127	82	81
115	160	81	170	99	121	104
134	166	93	157	100	105	93
158	178	87	161	117	93	79
136	170	80	161	110	113	103
129	183	79	160	220	146	98
167	169	70	140	1563	290	140
139	132	66	183	2782	860	211
97	182	53	130	1546	3363	209
44	127	55	146	1112	3475	715
45	163	51	188	497	800	3618
49	163	57	197	345	412	7189
						88

87	187	35	209	371	281	1410	67
86	188	62	184	486	175	907	67
79	137	80	92	258	78	349	52
38	89	43	99	91	43	159	53
42	52	64	108	54	52	118	38
74	48	74	45	67	62	62	42
75	84	86	74	83	67	96	72

sting on the bottom of the well (or at its maximum depth determined by the cable's length)

16uR	86
	75
	108
	70
	80
	20uR

to the pump itself or binding of the gamma probe on the tubing.

geology, water levels and construction details.

; in 6-second period.

concrete; red = sand pack. Intervals are approximate.

D87 Reading	I11 Reading	S10 Reading	D12 Reading	D13 Reading	D14 Reading	PZ-305-AI Reading	LR-104 Reading	PZ-111-KS Reading
			109					38
			75					49
			77					35
			86					50
			84					73
			105					54
			85					45
			76					39
			82					18
			68					33
			87					39
			81	101				25
			82	95				25
			75	88				26
			83	95				27
			68	97				23
			77	81				24
			99	94				39
			118	74				26
			92	99				27
			107	86				29
			81	108				53
			61	106				65
			81	82				47
			88	100				56
			78	102				32
			106	71				46
			112	87				41
			95	96				77
			122	80				53
			105	73				55
			95	79				45
			111	67				53
			119	85				44
			111	95				35
94			86	101				36
85			90	122				33
95			82	118				37
79			80	122				47
92			69	112				46
106			91	93				35
93			92	107				36
92			95	80				39
79			80	77				56
76			98	78				53

81		116	94		36
93		64	107		52
67		67	105		36
81		75	94		19
87		104	76		32
81		83	84		25
80		100	92		27
62		114	91		40
80	80	90	86		43
86	91	92	103		46
90	75	82	79		24
88	114	75	92		42
125	81	75	80		28
143	74	97	85		50
119	68	84	84		48
132	103	73	67		46
130	96	100	98		34
84	96	76	88		40
106	89	80	70		34
63	93	106	89		38
78	92	98	69		31
84	92	96	80		42
85	70	86	101		45
83	93	85	99		31
81	82	70	71		51
79	104	78	73		32
82	96	83	97		47
97	66	90	99		36
67	80	88	84		35
97	88	83	75		36
82	102	109	84		47
69	79	99	77		43
74	91	76	81		42
89	86	73	62		43
87	88	93	61		32
117	102	93	73		37
121	94	103	89		55
112	79	80	98		51
99	72	86	103	73	51
84	68	73	99	79	43
83	74	65	99	59	37
126	75	93	73	73	33
127	94	90	92	52	35
84	88	81	86	59	33
85	144	106	83	61	31
91	152	106	76	57	52
97	102	75	119	75	68
87	93	69	112	82	67
79	86	72	88	67	43

94	93	70	93	78		78	35
85	110	85	88	83		77	45
76	144	96	111	79		111	45
80	151	95	126	84		107	46
84	118	109	148	93		88	40
82	122	122	157	101		105	42
77	162	135	165	95		94	46
90	142	108	172	100		101	37
78	146	74	137	92		94	37
94	136	97	120	104		100	34
64	147	104	161	100		120	32
69	159	100	160	87		96	29
74	176	104	159	98		95	33
77	165	121	153	97		100	34
89	156	121	176	108	129	80	29
93	174	117	158	120	128	106	44
78	180	110	167	111	92	114	33
76	144	135	204	127	89	80	33
104	134	112	156	122	61	101	42
119	178	120	158	110	92	110	41
146	160	112	158	62	94	127	34
95	170	119	158	57	95	124	48
115	173	122	159	53	77	131	42
132	126	119	142	69	70	130	27
128	177	107	182	89	87	158	37
124	218	142	145	63	96	134	41
132	210	163	153	56	105	149	31
154	207	186	156	54	109	110	38
143	217	157	161	79	159	133	43
160	171	181	164	98	203	147	39
170	138	206	183	121	104	171	132
148	123	209	193	101	103	167	170
157	122	195	148	99	102	202	161
150	116	191	115	91	112	194	163
138	114	153	110	91	125	142	162
128	119	123	109	103	123	151	173
152	104	144	117	113	120	147	144
135	93	115	119	128	94	135	160
136	90	139	102	114	124	134	151
136	79	136	105	98	137	139	163
159	116	105	138	68	132	112	176
177	110	105	124	91	113	88	149
123	112	90	94	120	146	155	143
106	137	114	118	111	130	154	162
105	102	111	126	156	142	168	142
74	116	100	109	149	119	147	184
48	131	118	124	147	137	115	169
89	180	142	126	137	126	131	165
101	439	138	230	139	115	140	79

92	562	159	236	151	130	131	163	68
180	287	124	199	107	128	108	159	81
74	150	106	77	96	96	122	123	126
67	95	52	63	55	42	108	75	125
61	56	61	58	48	44	110	106	141
70	81	61	52	40	60	92	68	118
75	158	137	116	73	89	53	54	80

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PZ-111-SD	PZ-110-SS	PZ-109-SS	PZ-206-SS	LR103	I73	PZ-205-SS	PZ-205-AS
Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading

69		
59		
47		
103		
65	47	
78	46	
82	41	
77	72	
58	82	
72	90	
101	81	
105	91	
100	69	
70	98	
68	81	
82	79	
60	77	
61	61	
39	46	
63	55	
56	109	
70	63	
72	65	
60	101	41
76	97	84
54	67	59
84	53	51
76	53	74

49	46	66	
47	29	73	
40	46	54	
40	39	49	
40	61	73	
65	68	52	
56	57	50	
70	43	44	
74	54	38	
67	67	39	
56	58	44	27
44	64	49	43
57	121	43	26
46	53	36	27
62	59	49	40
77	60	66	28
43	49	36	33
59	55	74	49
62	73	55	64
86	50	55	66
139	57	73	49
159	65	41	46
147	65	67	42
203	62	72	66
170	60	70	55
115	79	49	44
192	97	47	41
131	62	55	50
91	79	65	49
66	59	64	49
111	40	74	54
66	40	87	37
60	40	98	37
52	51	52	54
48	47	104	40
46	43	64	61
54	51	51	73
37	53	53	108
41	70	51	56
43	57	39	44
36	76	57	96
41	85	46	60
41	73	44	55
43	64	48	42
41	72	54	45
65	34	49	59
63	54	89	34
60	82	112	48
85	55	70	51

	64	58	126		37	
	53	58	41		39	
	62	54	30		39	
	42	44	54		47	
	53	46	47	80	28	
	56	32	43	64	78	46
	42	68	31	54	84	52
	72	64	36	66	97	46
	58	39	29	71	92	50
	48	48	46	81	93	40
	43	35	40	74	87	55
49	50	38	51	101	106	56
54	56	60	35	80	103	53
56	47	92	48	93	114	46
56	58	99	46	90	135	51
60	42	75	51	102	112	57
50	56	88	36	95	116	62
65	62	93	51	92	104	56
54	41	150	47	104	124	46
76	44	81	48	140	112	41
57	44	65	43	122	109	53
59	51	220	32	138	97	51
67	62	97	45	127	126	51
81	69	68	58	157	110	56
82	82	54	43	145	101	61
70	74	60	57	130	85	47
77	96	62	50	126	122	30
69	74	40	51	140	101	34
81	83	47	50	135	98	43
78	79	62	57	142	115	35
80	70	44	57	150	92	31
77	91	21	43	149	115	33
64	81	45	62	125	124	52
65	94	54	55	117	126	46
63	83	29	67	105	128	30
69	64	32	57	116	116	36
65	53	33	62	133	130	30
77	60	49	61	114	118	36
75	60	128	60	161	112	41
74	74	141	58	156	116	41
62	69	132	65	146	117	38
70	60	128	55	145	110	43
93	61	108	46	69	111	33
79	65	139	64	93	91	38
79	54	145	58	94	117	33
87	57	112	70	111	103	41
59	56	103	57	26	114	43
70	65	94	54	31	104	38
74	32	37	61	22	105	51
						54

69	47	48	69	21	81	63	51
60	81	60	79	17	64	59	40
94	62	64	52	20	53	42	37
115	43	99	75	30	39	68	60
140	39	82	47	38	45	66	112
38	46	39	32	34	55	48	52
63	57	60	48	58	90	78	74

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14uR

PZ-107-SS	PZ-106-SD	PZ-106-KS	MW-1204	PZ-116-SS	PZ-105-SS	PZ-203-SS
Reading	Reading	Reading	Reading	Reading	Reading	Reading
64	74	35	70			
67	49	32	46	64		
30	56	27	59	61		
49	103	28	48	51		
65	164	30	40	48	60	
116	140	72	31	44	45	
136	110	56	38	46	43	
103	115	47	54	71	42	
92	73	27	53	64	46	
76	40	20	50	61	40	
46	43	28	53	64	34	
31	41	26	49	57	46	
35	40	23	46	49	63	
40	53	21	39	30	66	
25	35	27	28	47	47	
39	37	32	36	42	45	
35	51	34	46	56	47	
40	41	36	49	48	88	
43	38	24	37	59	97	
48	32	32	61	49	68	
38	42	32	63	56	63	
53	57	34	56	83	69	
61	61	47	73	83	59	
67	135	51	39	55	45	
121	131	51	47	63	44	
128	114	82	58	57	64	
119	110	57	39	56	57	
101	66	42	35	44	31	
116	107	51	29	33	46	
116	94	48	37	57	44	
90	104	43	35	29	56	
83	84	48	59	42	59	
80	102	39	39	49	81	
109	74	39	65	51	26	
73	70	43	38	70	31	
63	72	51	42	49	33	
67	60	46	40	72	62	
58	62	30	33	31	52	
51	42	51	26	31	41	
43	84	35	41	46	92	45
72	44	26	39	40	58	38
62	61	32	40	63	48	46
50	72	33	84	65	106	34
54	69	36	62	85	66	60
57	52	40	41	62	46	65

46	61	70	41	51	31	46	21
68	55	62	40	55	64	54	44
40	54	68	48	39	48	38	35
43	63	59	35	43	42	47	31
33	59	48	28	41	44	53	63
45	48	39	32	36	34	54	112
45	51	62	31	36	46	43	167
69	53	67	39	25	52	57	96
44	40	57	37	40	46	58	200
44	53	61	41	29	36	139	158
43	59	45	44	23	47	96	120
33	51	57	42	30	64	57	77
40	74	52	27	43	67	117	110
37	56	50	26	53	88	47	133
86	40	46	34	35	53	56	124
96	51	73	27	70	63	74	121
96	92	59	29	54	100	40	224
65	49	43	42	45	36	53	234
64	31	61	30	68	61	53	94
52	50	51	37	39	51	67	87
45	39	56	29	34	50	84	191
41	65	33	22	63	61	115	119
71	37	34	50	60	43	141	104
73	48	63	31	95	51	86	84
40	62	35	20	117	42	75	103
57	52	36	36	102	37	66	71
44	38	49	39	98	28	67	73
66	42	67	36	105	27	83	66
57	61	67	48	116	54	65	55
66	35	87	40	74	63	82	61
61	65	63	42	79	55	96	74
47	89	84	53	71	89	67	128
60	54	61	37	95	62	72	38
71	85	58	31	89	60	69	42
76	71	55	33	84	66	67	39
70	46	43	39	96	100	58	46
107	44	61	25	87	78	92	86
52	50	43	37	63	53	50	53
66	51	44	32	65	93	46	39
74	55	42	44	66	107	61	33
60	52	46	54	90	74	42	58
42	52	60	38	62	43	72	49
45	67	62	33	42	61	54	49
50	49	88	36	52	58	38	53
42	72	133	38	38	44	79	46
32	75	75	47	29	46	53	52
41	91	157	39	34	44	90	60
38	67	67	30	30	34	47	40
32	154	55	31	45	35	43	47

35	63	93	42	39	37	65	75
33	46	53	37	30	68	51	94
52	74	66	60	42	63	65	89
58	47	96	59	45	58	54	90
41	58	102	43	34	43	73	90
49	63	68	80	43	57	98	83
54	55	78	67	40	92	108	65
50	47	101	42	38	121	67	72
45	59	124	45	35	99	44	78
56	67	88	51	32	64	77	71
61	62	58	54	34	91	86	86
56	64	47	67	40	137	64	89
64	46	60	93	38	77	72	95
64	39	56	99	52	118	65	106
52	57	91	109	40	168	70	52
65	64	40	89	66	153	79	49
68	92	53	90	62	74	101	50
56	78	61	91	76	95	96	63
61	78	51	80	64	96	66	67
45	84	64	56	58	89	71	61
52	70	74	44	81	98	61	54
66	73	81	43	60	102	70	55
52	87	58	59	67	108	69	54
72	54	36	47	51	88	88	65
56	54	58	73	87	98	84	70
75	43	40	106	61	92	97	47
64	45	48	160	67	119	85	52
76	50	50	178	75	111	77	61
54	34	99	146	90	124	74	58
57	38	142	110	83	161	72	53
38	45	183	100	76	153	106	74
32	82	180	69	80	159	73	58
33	118	155	69	79	164	99	57
28	160	197	68	91	168	96	55
34	110	118	60	106	173	108	68
41	110	75	52	100	164	94	37
40	121	61	59	103	177	91	49
36	86	94	31	108	172	102	48
31	61	93	32	90	165	119	62
35	72	91	27	89	185	84	69
20	106	142	37	90	137	105	80
20	119	150	27	108	144	81	71
19	125	151	22	96	173	92	56
14	129	165	41	119	127	111	54
13	129	148	53	124	144	98	70
28	120	127	42	99	172	106	53
24	124	145	67	143	186	108	90
24	133	147	108	179	193	102	102
23	140	144	73	163	193	128	103

57	142	164	84	149	166	123	97
68	133	121	69	88	132	110	78
66	96	108	75	49	91	71	87
74	103	47	75	33	87	70	77
83	59	48	66	38	117	64	72
45	46	56	43	65	43	59	44
70	69	63	77	80	77	85	72

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83
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16uR

PZ-100-KS Reading	PZ-100-SD Reading	PZ-100-SS Reading	S-8 Reading	I62 Reading	D83 Reading	I66 Reading	I65 Reading
62							
63							
65							
46							
44							
58							
59							
51							
50							
60							
57							
64							
68							
46							
60							
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47							
57							
32							
23							
42							
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41							
63							
97							
27							
28							
86							
31							
41							
46							
50							
37							
38							
40							
43							
44							
50							
55							
60							
44							

78			
51			
53			
62			
67			
77			
55			
67	45		
50	50		
73	39		
115	43		
96	65		
115	46		
131	41		
147	45		
72	60	36	
30	88	24	
28	161	62	
38	105	71	
118	90	33	
74	65	34	119
61	69	38	101
63	85	73	93
70	82	59	104
57	84	62	109
94	149	109	121
95	146	135	116
80	100	63	111
54	77	50	108
47	84	42	84
54	53	62	101
42	58	76	104
44	36	40	103
67	45	48	88
47	41	69	77
39	46	45	111
29	42	46	97
42	85	47	106
67	50	90	89
43	26	89	82
35	30	69	89
28	50	50	105
50	39	60	93
29	26	45	109
33	35	50	95
24	32	47	108
29	32	43	86
37	35	43	105
39	35	39	86

35	43	45		95		
41	36	38		113		
32	35	70		102		
35	47	104		108		
25	45	98		125		
31	43	128		112		
48	50	133		79		
43	45	122		83		
48	51	105		78		
39	27	85		93		
42	59	102	93	84		
28	94	117	90	104		
35	110	158	86	86		
50	113	141	80	75		
54	98	116	72	66	74	
27	101	102	96	88	88	
60	94	108	72	67	87	92
48	74	117	66	61	94	89
45	74	105	80	101	68	75
43	84	98	86	93	64	80
117	121	147	55	79	77	99
129	142	145	99	79	66	89
130	130	118	71	94	72	89
153	161	156	82	91	72	98
158	108	167	66	99	72	81
134	125	149	70	81	77	95
164	133	171	103	89	76	98
172	119	165	106	91	84	93
144	118	161	87	67	75	102
143	127	161	68	71	85	81
151	121	155	78	89	84	107
158	106	174	88	101	85	96
160	120	179	90	103	83	87
198	118	163	102	106	88	95
135	128	140	82	100	84	99
127	102	138	90	120	89	89
135	126	130	97	133	77	73
154	96	166	82	103	81	87
131	120	151	96	116	90	93
149	120	168	107	119	100	81
156	109	178	107	78	116	86
125	118	155	122	118	116	77
143	113	193	118	113	96	87
162	172	195	127	103	116	106
103	177	190	124	124	136	79
140	205	218	114	127	138	102
132	170	208	117	118	135	106
140	178	197	118	140	142	159
127	197	212	163	143	133	180
						108

130	169	198	207	151	141	178	108
111	180	178	184	137	145	64	178
101	110	129	114	135	52	50	142
115	100	100	76	91	39	52	47
117	90	79	41	48	48	44	52
54	38	63	46	41	50	84	46
61	77	71	84	87	98	103	82

74		99		80
76		93		89
66		92		103
87		99		77
75		103		89
72		20uR		21uR

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MW-102	D6	S61	D93	I9	S82	MW-103	PZ-304-AS	PZ-304-AI
Reading	Reading							

	76
	121
	92
	104
	96
	91
	93
98	81
104	116
93	100
88	94
122	97
83	77

93		105
89		107
86		110
98		137
91		110
114		93
100		113
101		106
99		108
87		96
104		104
83		114
81		105
97		82
73		95
107		85
87		101
109		96
96		88
109		119
92		89
103		101
103		89
89		81
112		92
96		90
97		93
83		95
87		85
94		88
95		75
99		81
90		77
79		74
98		87
81		70
61		77
87		106
85		87
86		83
67		83
80		79
85		73
73		96
95		76
101	91	95
94	106	87
92	94	77
117	88	86

85		83	81			
99		82	101			
107		77	87			85
88		59	98			92
82		72	89			75
112		78	94			65
88		70	77			79
84		61	77			81
104		63	68			66
92		91	91			75
76		78	83			69
88		81	78			88
75		76	92			50
88		89	87			92
79		84	101			66
81		104	84			60
100		113	76			82
112		94	90			106
99		101	82			86
89		66	68			103
106		72	84			94
101		84	107			77
97		93	109			93
113		114	95			102
117		85	103			112
110		98	103		59	99
88		80	78		58	91
113		83	81		72	109
92		98	80	70	83	140
120	87	97	91	64	74	116
103	103	89	89	88	70	109
101	81	98	76	83	86	118
90	79	97	84	88	90	111
105	88	107	78	80	126	122
98	91	111	92	93	128	150
86	90	116	106	103	100	97
95	120	105	107	99	125	122
104	121	91	120	98	123	96
111	139	101	115	115	130	94
106	139	107	149	116	155	109
134	124	118	145	116	149	142
173	118	116	161	165	129	90
205	119	128	159	179	121	107
195	111	129	158	198	169	81
124	135	149	164	187	127	128
92	135	173	165	127	161	144
116	144	229	176	125	148	123
120	148	246	188	111	168	152
105	145	189	187	137	158	166
					182	192

125	146	169	177	109	148	203	212	168
132	118	123	130	108	152	222	193	141
92	83	74	90	31	37	130	129	139
99	40	49	60	32	28	65	126	113
99	55	62	37	50	29	50	124	107
66	58	75	57	35	62	118	95	109
112	154	125	81	96	74	69	86	78

143	143	126	72	83	20uR
114	29uR	152	74	83	
110		111	93	85	
129		150	85	90	
120		124	91	83	
25uR		30uR	108	17uR	
		18uR			

PZ-303-AS	LR-105	LR-100	PZ-302-AI	PZ-302-AS	D81	MW-104	PZ-101-SS
Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
							25
							47
							67
							41
							60
							83
							122
							67
							63
							58
							38
							44
							31
							37
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							81
							75
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							53
							58
							90
							60
							69
							88
							111
							51
							49
							90
							62
							55
							55
							51
							59

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136	
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149	
147	
120	
132	
145	
206	
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90	
70	
67	
105	
79	
63	
92	60
81	54
85	39
75	57
79	39
67	41
64	56
82	90

				64	98
				54	47
				80	54
				70	59
				89	54
				90	40
				95	56
				79	60
				83	40
				89	43
		80		121	47
		102		103	49
		69		111	42
		56		127	35
		57		92	31
		71		72	34
		74		114	43
		69		146	43
		51		168	31
		82		117	36
		70		134	33
		79		117	46
		72		99	71
		60		98	41
		69		101	43
	51		71	83	65
	32		140	87	104
61	30		75	110	132
84	25	98	89	87	125
71	31	30	81	91	160
72	59	31	80	102	84
60	61	58	112	90	97
94	106	54	97	83	85
81	170	28	132	99	74
104	131	53	108	97	84
123	50	87	140	97	98
78	38	101	165	99	98
103	65	84	152	97	126
85	78	59	148	138	114
104	64	105	149	132	122
111	93	76	184	128	106
163	60	68	190	128	127
155	57	53	188	113	137
167	54	70	175	113	119
133	35	96	138	135	136
140	29	91	165	177	159
148	89	75	164	181	137
159	123	66	158	185	75
171	143	77	191	201	61
					253
					52

145	186	101	196	158	116	269	48
170	123	139	187	136	71	174	46
102	102	107	144	92	53	108	56
134	105	119	125	120	18	72	48
102	112	101	122	110	33	63	31
99	106	65	143	115	43	57	48
80	96	88	85	76	103	52	74

FP!!!!!! Petro. Odor

90	17uR	82
70		105
70		79
81		113
76		88
17uR		18uR

PZ-102-SS PZ-103-SS PZ-104-SS
Reading Reading Reading

69		
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89	41	
42	54	
57	45	
46	36	
47	39	
44	52	
57	33	
50	33	
50	26	
62	60	
56	51	
57	63	
68	36	
63	38	
60	29	
48	53	
86	46	
64	50	
39	88	
68	88	
50	67	
62	79	
52	70	
62	61	
41	64	
37	59	
42	38	
51	60	
52	52	
56	53	
76	67	
62	55	
37	78	
68	93	
64	103	
45	65	
65	128	

58	72
50	41
30	89
42	71
44	58
47	125
65	96
55	57
87	82
143	94
81	82
83	86
76	66
95	39
73	55
94	100
176	54
221	96
161	198
59	94
56	104
109	134
97	110
87	71
47	188
39	364
56	294
153	277
145	194
94	93
107	77
80	62
82	116
56	107
90	88
75	93
57	136
67	107
49	69
57	52
53	58
60	72
66	35
80	64
67	39
104	43
68	48
94	67
69	107
	41

68	112	42
84	148	34
69	173	40
77	115	32
93	110	42
104	124	111
92	108	121
88	100	45
87	108	45
84	128	59
92	174	98
121	171	95
124	179	81
101	177	78
107	201	60
129	187	114
140	175	124
140	156	83
122	171	97
105	111	142
122	117	102
101	107	105
130	73	104
138	80	124
123	110	122
131	141	122
147	138	129
141	158	117
149	142	123
143	163	101
129	142	115
111	146	134
110	124	130
138	129	107
127	139	154
125	143	147
144	165	127
156	177	136
160	181	137
147	192	115
130	182	106
140	167	106
141	167	131
173	122	122
146	159	104
160	191	121
176	192	119
157	169	110
191	96	134

187	102	133
161	77	112
118	48	136
85	64	97
104	51	97
51	58	60
54	84	65

75	87
66	72
86	76
72	80
65	87
78	91

16uR

16uR

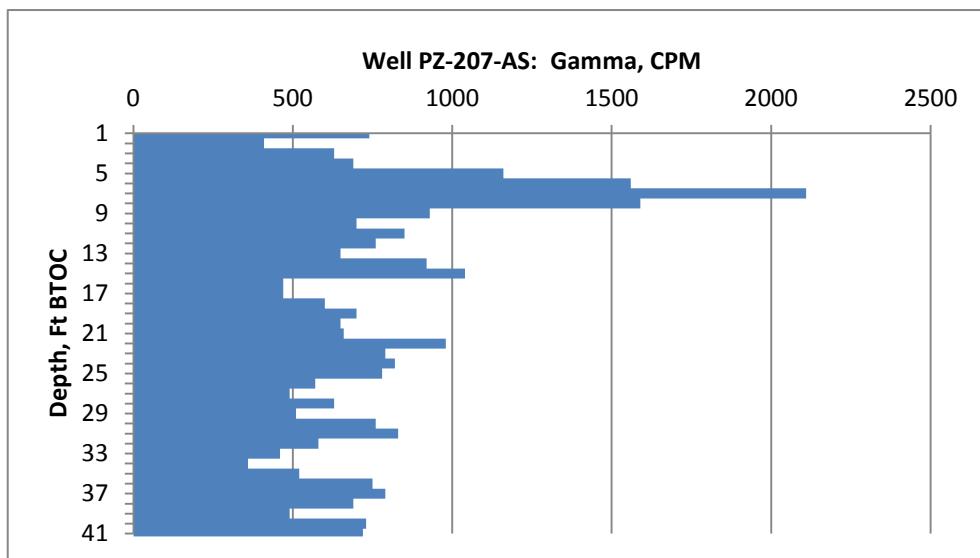
Well Name ----->	PZ-207-AS	PZ-113-SS	PZ-113-AD	PZ-113-AS	D85	S84	I67
Depth, Ft BTOC	CPM	CPM	CPM	CPM	CPM	CPM	CPM
0	740	470	440	430	710	660	810
1	410	400	350	460	500	460	620
2	630	800	830	900	520	320	710
3	690	680	1000	1110	480	530	800
4	1160	770	1270	1120	800	740	960
5	1560	750	1500	1190	1800	1030	1680
6	2110	980	1530	1480	1670	1020	1550
7	1590	980	1510	1740	1270	1080	1310
8	930	850	1650	1740	1190	1100	1250
9	700	730	1600	1460	1190	1180	980
10	850	810	1930	1720	1060	1430	1180
11	760	870	1680	1540	1250	1250	1080
12	650	640	1940	1680	1320	1210	1060
13	920	760	1810	1530	1520	1040	980
14	1040	760	1870	1400	1480	1180	1030
15	470	780	1760	1710	1260	1280	850
16	470	820	1730	1470	1360	1330	780
17	600	710	1720	1430	1560	1500	860
18	700	700	1500	1600	1400	1360	770
19	650	770	1640	1800	1640	1480	780
20	660	850	1990	1470	1570	1370	680
21	980	1020	1940	1640	1580	1640	720
22	790	730	1510	1570	1590	1420	770
23	820	970	1620	1670	1350	1800	980
24	780	650	1570	1190	1540	1470	810
25	570	830	1820	1390	1300	1540	870
26	490	780	1800	990	1140	1190	860
27	630	780	1210	1180	950	820	950
28	510	900	1130	1000	1040	1080	950
29	760	790	1000	1120	1030	790	1060
30	830	660	930	1140	1030	810	710
31	580	680	970	1110	850	730	860
32	460	680	1050	970	840	620	940
33	360	530	1010	920	820	620	760
34	520	510	900	890	680	0	820
35	750	600	1060	820	760	0	950
36	790	450	940	880	720	0	820
37	690	480	1130	740	890	0	900
38	490	620	940	760	760	0	870
39	730	520	960	690	910	0	950
40	720	440	1040	0	820	0	980
41	0	520	1030	0	680	0	1040
42	0	650	1080	0	920	0	0
43	0	480	1190	0	830	0	0
44	0	580	1120	0	890	0	0
45	0	420	960	0	710	0	0
46	0	500	940	0	960	0	0

47	0	590	850	0	920	0	0
48	0	380	930	0	780	0	0
49	0	530	980	0	1010	0	0
50	0	550	890	0	880	0	0
51	0	390	960	0	750	0	0
52	0	530	990	0	740	0	0
53	0	580	920	0	710	0	0
54	0	630	1210	0	740	0	0
55	0	440	950	0	970	0	0
56	0	560	1000	0	790	0	0
57	0	580	710	0	810	0	0
58	0	540	850	0	810	0	0
59	0	600	1020	0	790	0	0
60	0	420	850	0	1010	0	0
61	0	460	1140	0	1160	0	0
62	0	550	890	0	1240	0	0
63	0	480	1040	0	970	0	0
64	0	650	780	0	990	0	0
65	0	510	1080	0	640	0	0
66	0	730	1110	0	820	0	0
67	0	620	1220	0	790	0	0
68	0	600	940	0	810	0	0
69	0	640	1000	0	960	0	0
70	0	520	960	0	780	0	0
71	0	600	810	0	670	0	0
72	0	500	940	0	830	0	0
73	0	470	1280	0	790	0	0
74	0	620	1030	0	800	0	0
75	0	550	1060	0	740	0	0
76	0	560	1000	0	910	0	0
77	0	410	1020	0	870	0	0
78	0	660	1100	0	710	0	0
79	0	530	970	0	910	0	0
80	0	700	1210	0	950	0	0
81	0	560	960	0	890	0	0
82	0	510	820	0	0	0	0
83	0	560	870	0	0	0	0
84	0	470	1070	0	0	0	0
85	0	480	950	0	0	0	0
86	0	610	1050	0	0	0	0
87	0	610	640	0	0	0	0
88	0	370	740	0	0	0	0
89	0	470	690	0	0	0	0
90	0	530	790	0	0	0	0
91	0	470	920	0	0	0	0
92	0	430	1010	0	0	0	0
93	0	630	840	0	0	0	0
94	0	390	900	0	0	0	0
95	0	600	800	0	0	0	0

96	0	530	730	0	0	0	0
97	0	480	790	0	0	0	0
98	0	530	850	0	0	0	0
99	0	540	750	0	0	0	0
100	0	610	810	0	0	0	0
101	0	630	780	0	0	0	0
102	0	530	880	0	0	0	0
103	0	420	1050	0	0	0	0
104	0	500	860	0	0	0	0
105	0	540	870	0	0	0	0
106	0	540	860	0	0	0	0
107	0	550	930	0	0	0	0
108	0	530	1040	0	0	0	0
109	0	470	810	0	0	0	0
110	0	470	970	0	0	0	0
111	0	340	0	0	0	0	0
112	0	350	0	0	0	0	0
113	0	540	0	0	0	0	0
114	0	450	0	0	0	0	0
115	0	570	0	0	0	0	0
116	0	420	0	0	0	0	0
117	0	680	0	0	0	0	0
118	0	1000	0	0	0	0	0
119	0	1470	0	0	0	0	0
120	0	1350	0	0	0	0	0
121	0	750	0	0	0	0	0
122	0	690	0	0	0	0	0
123	0	810	0	0	0	0	0
124	0	480	0	0	0	0	0
125	0	280	0	0	0	0	0
126	0	210	0	0	0	0	0
127	0	330	0	0	0	0	0
128	0	430	0	0	0	0	0
129	0	370	0	0	0	0	0
130	0	330	0	0	0	0	0
131	0	360	0	0	0	0	0
132	0	490	0	0	0	0	0
133	0	390	0	0	0	0	0
134	0	410	0	0	0	0	0
135	0	520	0	0	0	0	0
136	0	410	0	0	0	0	0
137	0	690	0	0	0	0	0
138	0	850	0	0	0	0	0
139	0	790	0	0	0	0	0
140	0	1370	0	0	0	0	0
141	0	1110	0	0	0	0	0
142	0	480	0	0	0	0	0
143	0	620	0	0	0	0	0
144	0	730	0	0	0	0	0

145	0	600	0	0	0	0	0
146	0	340	0	0	0	0	0
147	0	240	0	0	0	0	0
148	0	230	0	0	0	0	0
149	0	270	0	0	0	0	0
150	0	0	0	0	0	0	0

This is the 6-second-count data from Tab 1 multiplied by 10 to yield counts per minute, with the data shown in the following chart.

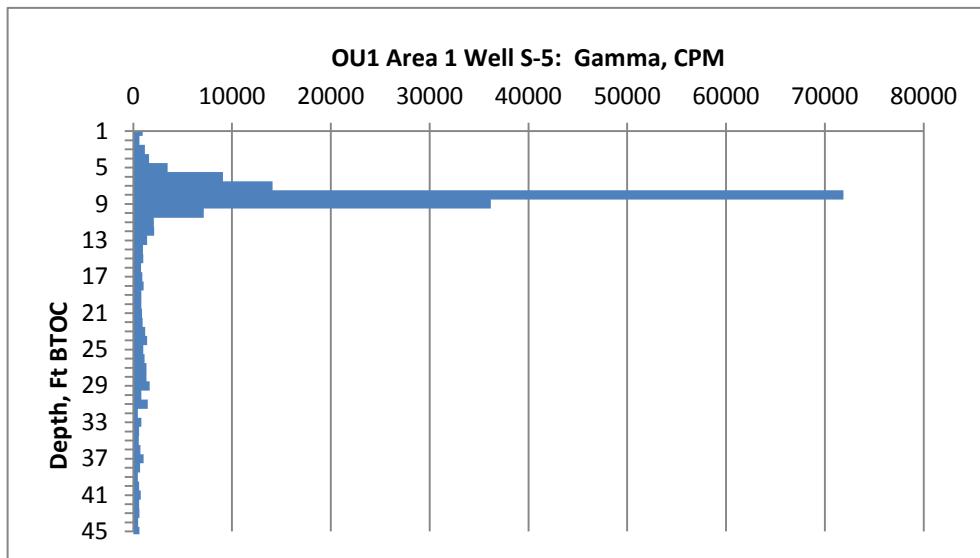


I68 CPM	PZ-114-AS CPM	PZ-115-SS CPM	PZ-208-SS CPM	D3 CPM	I4 CPM	S5 CPM	PZ-112-AS CPM
750	840	860	740	830	670	960	720
740	480	740	450	670	620	620	420
420	520	640	1080	540	520	1180	380
380	890	430	990	910	430	1590	530
790	1370	800	920	2580	780	3490	520
860	1880	620	1840	4860	1750	9070	670
870	1870	350	2090	3710	2810	14100	670
490	1630	570	1970	3450	4120	71890	880
450	1630	510	1880	4970	8000	36180	940
440	1270	550	1460	11120	34750	7150	890
970	1820	530	1300	15460	33630	2090	700
1390	1320	660	1830	27820	8600	2110	610
1670	1690	700	1400	15630	2900	1400	510
1290	1830	790	1600	2200	1460	980	540
1360	1700	800	1610	1100	1130	1030	710
1580	1780	870	1610	1170	930	790	830
1340	1660	930	1570	1000	1050	930	580
1150	1600	810	1700	990	1210	1040	760
1220	1230	720	1290	1270	820	810	910
980	1470	610	810	820	740	820	980
1260	1120	850	620	730	920	880	920
1470	1020	620	340	660	950	940	710
1150	890	630	360	560	1040	1210	480
1080	1040	570	350	790	870	1400	650
1090	990	570	380	1030	1040	1020	1170
1090	1020	450	550	1050	1160	1160	1250
920	0	700	400	760	920	1330	1370
860	0	610	340	680	860	1340	1600
860	0	490	380	1200	860	1660	1380
830	0	470	380	1410	820	820	1490
810	0	470	370	1580	670	1470	1250
860	0	480	440	1640	880	460	1110
780	0	540	390	1740	990	820	1110
710	0	430	480	1380	1070	590	1100
610	0	580	360	1620	1010	550	950
790	0	430	420	1240	820	710	690
800	0	310	400	1150	740	1050	700
700	0	340	560	1110	1130	680	570
740	0	310	610	1140	1480	480	700
720	0	470	370	910	1110	580	460
760	0	600	480	980	850	740	0
700	0	380	280	1330	990	600	0
0	0	540	360	1160	1050	630	0
0	0	520	560	1060	1080	490	0
0	0	610	390	1070	960	630	0
0	0	700	360	1000	890	0	0
0	0	440	400	890	1110	0	0

0	0	510	730	850	1000	0	0
0	0	540	1040	1040	850	0	0
0	0	440	530	980	1000	0	0
0	0	510	490	920	840	0	0
0	0	700	570	900	910	0	0
0	0	570	700	820	1040	0	0
0	0	520	460	980	1160	0	0
0	0	420	520	960	910	0	0
0	0	610	490	1000	950	0	0
0	0	440	790	1220	1090	0	0
0	0	560	750	1150	940	0	0
0	0	290	850	1030	930	0	0
0	0	300	990	1080	0	0	0
0	0	460	840	1090	0	0	0
0	0	290	740	880	0	0	0
0	0	330	970	820	0	0	0
0	0	480	860	1000	0	0	0
0	0	380	800	1040	0	0	0
0	0	400	480	860	0	0	0
0	0	450	770	760	0	0	0
0	0	310	860	900	0	0	0
0	0	420	570	930	0	0	0
0	0	340	420	1010	0	0	0
0	0	450	370	1310	0	0	0
0	0	730	350	1250	0	0	0
0	0	480	680	1010	0	0	0
0	0	470	320	1100	0	0	0
0	0	840	400	940	0	0	0
0	0	480	360	1050	0	0	0
0	0	460	280	990	0	0	0
0	0	430	460	990	0	0	0
0	0	560	520	900	0	0	0
0	0	440	380	1090	0	0	0
0	0	440	630	980	0	0	0
0	0	380	560	950	0	0	0
0	0	0	500	1220	0	0	0
0	0	0	770	1250	0	0	0
0	0	0	590	1040	0	0	0
0	0	0	660	960	0	0	0
0	0	0	330	1030	0	0	0
0	0	0	360	980	0	0	0
0	0	0	350	1070	0	0	0
0	0	0	350	1150	0	0	0
0	0	0	250	970	0	0	0
0	0	0	270	1000	0	0	0
0	0	0	360	990	0	0	0
0	0	0	340	1330	0	0	0
0	0	0	260	1080	0	0	0
0	0	0	190	940	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

et flipped top-to-bottom so data reads downward with depth. Zero values indicate no data (ie. \



D87 CPM	I11 CPM	S10 CPM	D12 CPM	D13 CPM	D14 CPM	PZ-305-AI CPM	LR-104 CPM	PZ-111-KS CPM
750	1580	1370	1160	730	890	530	540	800
700	810	610	520	400	600	920	680	1180
610	560	610	580	480	440	1100	1060	1410
670	950	520	630	550	420	1080	750	1250
740	1500	1060	770	960	960	1220	1230	1260
1800	2870	1240	1990	1070	1280	1080	1590	810
920	5620	1590	2360	1510	1300	1310	1630	680
1010	4390	1380	2300	1390	1150	1400	1480	790
890	1800	1420	1260	1370	1260	1310	1650	670
480	1310	1180	1240	1470	1370	1150	1690	550
740	1160	1000	1090	1490	1190	1470	1840	450
1050	1020	1110	1260	1560	1420	1680	1420	380
1060	1370	1140	1180	1110	1300	1540	1620	260
1230	1120	900	940	1200	1460	1550	1430	330
1770	1100	1050	1240	910	1130	880	1490	440
1590	1160	1050	1380	680	1320	1120	1760	450
1360	790	1360	1050	980	1370	1390	1630	370
1360	900	1390	1020	1140	1240	1340	1510	340
1350	930	1150	1190	1280	940	1350	1600	360
1520	1040	1440	1170	1130	1200	1470	1440	520
1280	1190	1230	1090	1030	1230	1510	1730	510
1380	1140	1530	1100	910	1250	1420	1620	400
1500	1160	1910	1150	910	1120	1940	1630	450
1570	1220	1950	1480	990	1020	2020	1610	420
1480	1230	2090	1930	1010	1030	1670	1700	450
1700	1380	2060	1830	1210	1040	1710	1320	530
1600	1710	1810	1640	980	0	2030	1470	390
1430	2170	1570	1610	790	0	1590	1330	430
1540	2070	1860	1560	540	0	1090	1100	380
1320	2100	1630	1530	560	0	1050	1490	310
1240	2180	1420	1450	630	0	960	1340	410
1280	1770	1070	1820	890	0	870	1580	370
1320	1260	1190	1420	690	0	700	1300	270
1150	1730	1220	1590	530	0	770	1310	420
950	1700	1190	1580	570	0	950	1240	480
1460	1600	1120	1580	620	0	940	1270	340
1190	1780	1200	1580	1100	0	920	1100	410
1040	1340	1120	1560	1220	0	610	1010	420
760	1440	1350	2040	1270	0	890	800	330
780	1800	1100	1670	1110	0	920	1140	330
930	1740	1170	1580	1200	0	1280	1060	440
890	1560	1210	1760	1080	0	1290	800	290
770	1650	1210	1530	970	0	0	1000	340
740	1760	1040	1590	980	0	0	950	330
690	1590	1000	1600	870	0	0	960	290
640	1470	1040	1610	1000	0	0	1200	320
940	1360	970	1200	1040	0	0	1000	340

780	1460	740	1370	920	0	0	940	370
900	1420	1080	1720	1000	0	0	1010	370
770	1620	1350	1650	950	0	0	940	460
820	1220	1220	1570	1010	0	0	1050	420
840	1180	1090	1480	930	0	0	880	400
800	1510	950	1260	840	0	0	1070	460
760	1440	960	1110	790	0	0	1110	450
850	1100	850	880	830	0	0	770	450
940	930	700	930	780	0	0	780	350
790	860	720	880	670	0	0	640	430
870	930	690	1120	820	0	0	670	440
970	1020	750	1190	750	0	0	680	360
910	1520	0	1060	760	0	0	570	520
850	1440	0	1060	830	0	0	610	310
840	880	0	810	860	0	0	590	330
1270	940	0	900	920	0	0	520	350
1260	750	0	930	730	0	0	730	330
830	740	0	650	990	0	0	590	370
840	680	0	730	990	0	0	790	430
990	720	0	860	1030	0	0	730	510
1120	790	0	800	980	0	0	0	510
1210	940	0	1030	890	0	0	0	550
1170	1020	0	930	730	0	0	0	370
870	880	0	930	610	0	0	0	320
890	860	0	730	620	0	0	0	430
740	910	0	760	810	0	0	0	420
690	790	0	990	770	0	0	0	430
820	1020	0	1090	840	0	0	0	470
970	880	0	830	750	0	0	0	360
670	800	0	880	840	0	0	0	350
970	660	0	900	990	0	0	0	360
820	960	0	830	970	0	0	0	470
790	1040	0	780	730	0	0	0	320
810	820	0	700	710	0	0	0	510
830	930	0	850	990	0	0	0	310
850	700	0	860	1010	0	0	0	450
840	920	0	960	800	0	0	0	420
780	920	0	980	690	0	0	0	310
630	930	0	1060	890	0	0	0	380
1060	890	0	800	700	0	0	0	340
840	960	0	760	880	0	0	0	400
1300	960	0	1000	980	0	0	0	340
1320	1030	0	730	670	0	0	0	460
1190	680	0	840	840	0	0	0	480
1430	740	0	970	850	0	0	0	500
1250	810	0	750	800	0	0	0	280
880	1140	0	750	920	0	0	0	420
900	750	0	820	790	0	0	0	240
860	910	0	920	1030	0	0	0	460

800	800	0	900	860	0	0	0	430
620	0	0	1140	910	0	0	0	400
800	0	0	1000	920	0	0	0	270
810	0	0	830	840	0	0	0	250
870	0	0	1040	760	0	0	0	320
810	0	0	750	940	0	0	0	190
670	0	0	670	1050	0	0	0	360
930	0	0	640	1070	0	0	0	520
810	0	0	1160	940	0	0	0	360
760	0	0	980	780	0	0	0	530
790	0	0	800	770	0	0	0	560
920	0	0	950	800	0	0	0	390
930	0	0	920	1070	0	0	0	360
1060	0	0	910	930	0	0	0	350
920	0	0	690	1120	0	0	0	460
790	0	0	800	1220	0	0	0	470
950	0	0	820	1180	0	0	0	370
850	0	0	900	1220	0	0	0	330
940	0	0	860	1010	0	0	0	360
0	0	0	1110	950	0	0	0	350
0	0	0	1190	850	0	0	0	440
0	0	0	1110	670	0	0	0	530
0	0	0	950	790	0	0	0	450
0	0	0	1050	730	0	0	0	550
0	0	0	1220	800	0	0	0	530
0	0	0	950	960	0	0	0	770
0	0	0	1120	870	0	0	0	410
0	0	0	1060	710	0	0	0	460
0	0	0	780	1020	0	0	0	320
0	0	0	880	1000	0	0	0	560
0	0	0	810	820	0	0	0	470
0	0	0	610	1060	0	0	0	650
0	0	0	810	1080	0	0	0	530
0	0	0	1070	860	0	0	0	290
0	0	0	920	990	0	0	0	270
0	0	0	1180	740	0	0	0	260
0	0	0	990	940	0	0	0	390
0	0	0	770	810	0	0	0	240
0	0	0	680	970	0	0	0	230
0	0	0	830	950	0	0	0	270
0	0	0	750	880	0	0	0	260
0	0	0	820	950	0	0	0	250
0	0	0	810	1010	0	0	0	250
0	0	0	870	0	0	0	0	390
0	0	0	680	0	0	0	0	330
0	0	0	820	0	0	0	0	180
0	0	0	760	0	0	0	0	390
0	0	0	850	0	0	0	0	450
0	0	0	1050	0	0	0	0	540

0	0	0	840	0	0	0	0	730
0	0	0	860	0	0	0	0	500
0	0	0	770	0	0	0	0	350
0	0	0	750	0	0	0	0	490
0	0	0	1090	0	0	0	0	380
0	0	0	0	0	0	0	0	0

well does not go that deep).

PZ-111-SD	PZ-110-SS	PZ-109-SS	PZ-206-SS	LR103	I73	PZ-205-SS	PZ-205-AS
CPM	CPM	CPM	CPM	CPM	CPM	CPM	CPM
630	570	600	480	580	900	780	740
380	460	390	320	340	550	480	520
1400	390	820	470	380	450	660	1120
1150	430	990	750	300	390	680	600
940	620	640	520	200	530	420	370
600	810	600	790	170	640	590	400
690	470	480	690	210	810	630	510
740	320	370	610	220	1050	510	540
700	650	940	540	310	1040	380	510
590	560	1030	570	260	1140	430	500
870	570	1120	700	1110	1030	410	630
790	540	1450	580	940	1170	330	380
790	650	1390	640	930	910	380	480
930	610	1080	460	690	1110	330	610
700	600	1280	550	1450	1100	430	670
620	690	1320	650	1460	1170	380	500
740	740	1410	580	1560	1160	410	420
750	600	1280	600	1610	1120	410	500
770	600	490	610	1140	1180	360	500
650	530	330	620	1330	1300	300	520
690	640	320	570	1160	1160	360	420
630	830	290	670	1050	1280	300	520
650	940	540	550	1170	1260	460	570
640	810	450	620	1250	1240	520	470
770	910	210	430	1490	1150	330	560
800	700	440	570	1500	920	310	530
780	790	620	570	1420	1150	350	430
810	830	470	500	1350	980	430	530
690	740	400	510	1400	1010	340	770
770	960	620	500	1260	1220	300	930
700	740	600	570	1300	850	470	960
820	820	540	430	1450	1010	610	1480
810	690	680	580	1570	1100	560	1410
670	620	970	450	1270	1260	510	1140
590	510	2200	320	1380	970	510	1060
570	440	650	430	1220	1090	530	1020
760	440	810	480	1400	1120	410	750
540	410	1500	470	1040	1240	460	840
650	620	930	510	920	1040	560	1200
500	560	880	360	950	1160	620	970
600	420	750	510	1020	1120	570	710
560	580	990	460	900	1350	510	940
560	470	920	480	930	1140	460	1040
540	560	600	350	800	1030	530	970
490	500	380	510	1010	1060	560	1140
0	430	350	400	740	870	550	740
0	480	480	460	810	930	400	830

0	580	390	290	710	920	500	920
0	720	640	360	660	970	460	1140
0	420	680	310	540	840	520	980
0	560	320	430	640	780	460	0
0	530	460	470	0	800	280	0
0	420	440	540	0	0	470	0
0	620	540	300	0	0	390	0
0	530	580	410	0	0	390	0
0	640	580	1260	0	0	370	0
0	850	550	700	0	0	510	0
0	600	820	1120	0	0	480	0
0	630	540	890	0	0	340	0
0	650	340	490	0	0	590	0
0	410	720	540	0	0	450	0
0	430	640	480	0	0	420	0
0	410	730	440	0	0	550	0
0	410	850	460	0	0	600	0
0	360	760	570	0	0	960	0
0	430	570	390	0	0	440	0
0	410	700	510	0	0	560	0
0	370	530	530	0	0	1080	0
0	540	510	510	0	0	730	0
0	460	430	640	0	0	610	0
0	480	470	1040	0	0	400	0
0	520	510	520	0	0	540	0
0	600	400	980	0	0	370	0
0	660	400	870	0	0	370	0
0	1110	400	740	0	0	540	0
0	660	590	640	0	0	490	0
0	910	790	650	0	0	490	0
0	1310	620	550	0	0	500	0
0	1920	970	470	0	0	410	0
0	1150	790	490	0	0	440	0
0	1700	600	700	0	0	550	0
0	2030	620	720	0	0	660	0
0	1470	650	670	0	0	420	0
0	1590	650	410	0	0	460	0
0	1390	570	730	0	0	490	0
0	860	500	550	0	0	660	0
0	620	730	550	0	0	640	0
0	590	550	740	0	0	490	0
0	430	490	360	0	0	330	0
0	770	600	660	0	0	280	0
0	620	590	490	0	0	400	0
0	460	530	360	0	0	270	0
0	570	1210	430	0	0	260	0
0	440	640	490	0	0	430	0
0	560	580	440	0	0	270	0
0	670	670	390	0	0	0	0

PZ-107-SS CPM	PZ-106-SS CPM	PZ-106-SD CPM	PZ-106-KS CPM	MW-1204 CPM	PZ-116-SS CPM	PZ-105-SS CPM	PZ-203-SS CPM
700	690	630	770	800	770	850	720
450	460	560	430	650	430	590	440
830	590	480	660	380	1170	640	720
740	1030	470	750	330	870	700	770
660	960	1080	750	490	910	710	870
680	1330	1210	690	880	1320	1100	780
570	1420	1640	840	1490	1660	1230	970
230	1400	1440	730	1630	1930	1280	1030
240	1330	1470	1080	1790	1930	1020	1020
240	1240	1450	670	1430	1860	1080	900
280	1200	1270	420	990	1720	1060	530
130	1290	1480	530	1240	1440	980	700
140	1290	1650	410	1190	1270	1110	540
190	1250	1510	220	960	1730	920	560
200	1190	1500	270	1080	1440	810	710
200	1060	1420	370	900	1370	1050	800
350	720	910	270	890	1850	840	690
310	610	930	320	900	1650	1190	620
360	860	940	310	1080	1720	1020	480
400	1210	610	590	1030	1770	910	490
410	1100	750	520	1000	1640	940	370
340	1100	1180	600	1060	1730	1080	680
280	1600	1970	680	910	1680	960	550
330	1180	1550	690	790	1640	990	570
320	820	1800	690	800	1590	730	580
380	450	1830	1000	760	1530	1060	740
570	380	1420	1100	830	1610	720	530
540	340	990	1460	900	1240	740	580
760	500	500	1780	750	1110	770	610
640	450	480	1600	670	1190	850	520
750	430	400	1060	610	920	970	470
560	540	580	730	870	980	840	700
720	540	360	470	510	880	880	650
520	870	580	590	670	1080	690	540
660	730	810	430	600	1020	700	550
520	700	740	440	810	980	610	540
450	840	640	560	580	890	710	610
610	780	510	800	640	960	660	670
560	780	610	910	760	950	960	630
680	920	530	900	620	740	1010	500
650	640	400	890	660	1530	790	490
520	570	910	1090	400	1680	700	520
640	390	560	990	520	1180	650	1060
640	460	600	930	380	770	720	950
560	640	470	670	400	1370	640	890
610	620	580	540	340	910	860	860
560	670	880	510	320	640	770	710

450	590	1240	450	350	990	440	780
500	470	1010	420	380	1210	670	720
540	550	780	670	400	920	1080	650
490	630	680	800	430	570	980	830
410	580	1020	430	340	430	730	900
580	470	960	590	450	580	540	900
520	740	660	600	420	630	650	890
330	460	530	370	300	680	510	940
350	630	930	420	390	370	650	750
320	1540	550	310	450	350	430	470
380	670	670	300	300	340	470	400
410	910	1570	390	340	440	900	600
320	750	750	470	290	460	530	520
420	720	1330	380	380	440	790	460
500	490	880	360	520	580	380	530
450	670	620	330	420	610	540	490
420	520	600	380	620	430	720	490
600	520	460	540	900	740	420	580
740	550	420	440	660	1070	610	330
660	510	440	320	650	930	460	390
520	500	430	370	630	530	500	530
1070	440	610	250	870	780	920	860
700	460	430	390	960	1000	580	460
760	710	550	330	840	660	670	390
710	850	580	310	890	600	690	420
600	540	610	370	950	620	720	380
470	890	840	530	710	890	670	1280
610	650	630	420	790	550	960	740
660	350	870	400	740	630	820	610
570	610	670	480	1160	540	650	550
660	420	670	360	1050	270	830	660
440	380	490	390	980	280	670	730
570	520	360	360	1020	370	660	710
400	620	350	200	1170	420	750	1030
730	480	630	310	950	510	860	840
710	370	340	500	600	430	1410	1040
410	650	330	220	630	610	1150	1190
450	390	560	290	340	500	840	1910
520	500	510	370	390	510	670	870
640	310	610	300	680	610	530	940
650	490	430	420	450	360	530	2340
960	920	590	290	540	1000	400	2240
960	510	730	270	700	630	740	1210
860	400	460	340	350	530	560	1240
370	560	500	260	530	880	470	1330
400	740	520	270	430	670	1170	1100
330	510	570	420	300	640	570	770
430	590	450	440	230	470	960	1200
440	530	610	410	290	360	1390	1580

440	400	570	370	400	460	580	2000
690	530	670	390	250	520	570	960
450	510	620	310	360	460	430	1670
450	480	390	320	360	340	540	1120
330	590	480	280	410	440	530	630
430	630	590	350	430	420	470	310
400	540	680	480	390	480	380	350
680	550	620	400	550	640	540	440
460	610	700	410	510	310	460	210
0	570	520	400	410	620	460	650
0	540	690	360	620	850	660	600
0	500	720	330	840	650	1060	340
0	620	610	320	400	630	480	460
0	720	440	260	390	400	580	380
0	430	840	350	410	460	920	450
0	510	420	510	260	310	410	0
0	580	620	300	330	310	520	0
0	670	600	460	400	720	620	0
0	630	720	510	420	490	330	0
0	730	700	430	380	700	310	0
0	1090	740	390	650	510	260	0
0	800	1020	390	390	490	810	0
0	830	840	480	590	420	590	0
0	900	1040	430	350	290	560	0
0	1160	940	480	370	570	440	0
0	1160	1070	510	290	330	460	0
0	1010	660	420	350	440	310	0
0	1190	1100	570	390	560	570	0
0	1280	1140	820	580	570	640	0
0	1210	1310	510	470	630	440	0
0	670	1350	510	390	550	450	0
0	610	610	470	730	830	590	0
0	530	570	340	560	830	690	0
0	380	420	320	630	560	630	0
0	480	320	320	610	490	680	0
0	430	380	240	370	590	970	0
0	400	410	360	490	480	880	0
0	350	510	340	460	560	470	0
0	390	370	320	360	420	450	0
0	250	350	270	280	470	470	0
0	400	530	210	390	300	660	0
0	350	400	230	460	490	630	0
0	310	410	260	490	570	460	0
0	460	430	280	530	640	340	0
0	760	400	200	500	610	400	0
0	920	730	270	530	640	460	0
0	1030	1150	470	540	710	420	0
0	1360	1100	560	380	460	430	0
0	1160	1400	720	310	440	450	0

0	650	1640	300	400	480	600	0
0	490	1030	280	480	510	0	0
0	300	560	270	590	610	0	0
0	670	490	320	460	640	0	0
0	640	740	350	700	0	0	0
0	0	0	0	0	0	0	0

PZ-100-KS CPM	PZ-100-SD CPM	PZ-100-SS CPM	S-8 CPM	I62 CPM	D83 CPM	I66 CPM	I65 CPM
610	770	710	840	870	980	1030	820
540	380	630	460	410	500	840	460
1170	900	790	410	480	480	440	520
1150	1000	1000	760	910	390	520	470
1010	1100	1290	1140	1350	520	500	1420
1110	1800	1780	1840	1370	1450	640	1780
1300	1690	1980	2070	1510	1410	1780	1080
1270	1970	2120	1630	1430	1330	1800	1080
1400	1780	1970	1180	1400	1420	1590	1250
1320	1700	2080	1170	1180	1350	1060	1070
1400	2050	2180	1140	1270	1380	1020	990
1030	1770	1900	1240	1240	1360	790	1040
1620	1720	1950	1270	1030	1160	1060	1010
1430	1130	1930	1180	1130	960	870	790
1250	1180	1550	1220	1180	1160	770	1000
1560	1090	1780	1070	780	1160	860	820
1490	1200	1680	1070	1190	1000	810	940
1310	1200	1510	960	1160	900	900	930
1540	960	1660	0	820	1030	810	870
1350	1260	1300	0	970	1330	770	730
1270	1020	1380	0	900	1200	890	890
1350	1280	1400	0	820	1000	840	990
1980	1180	1630	0	1020	1060	880	950
1600	1200	1790	0	900	1030	830	870
1580	1060	1740	0	880	1010	850	960
1510	1210	1550	0	780	890	840	1070
1430	1270	1610	0	680	710	850	810
1440	1180	1610	0	870	670	750	1020
1720	1190	1650	0	1060	910	840	930
1640	1330	1710	0	1030	890	760	980
1340	1250	1490	0	700	810	770	950
1580	1080	1670	0	660	990	720	810
1530	1610	1560	0	820	910	720	980
1300	1300	1180	0	710	940	720	890
1290	1420	1450	0	990	790	660	890
1170	1210	1470	0	550	790	770	990
430	840	980	0	860	930	640	800
450	740	1050	0	800	1010	680	750
480	740	1170	0	660	610	940	890
600	940	1080	0	720	670	870	920
270	1010	1020	0	960	880	880	0
540	980	1160	0	720	660	740	0
500	1130	1410	0	800	750	0	0
350	1100	1580	0	860	860	0	0
280	940	1170	0	900	1040	0	0
420	590	1020	0	930	840	0	0
390	270	850	0	0	930	0	0

480	510	1050	0	0	780	0	0
430	450	1220	0	0	830	0	0
480	500	1330	0	0	790	0	0
310	430	1280	0	0	1120	0	0
250	450	980	0	0	1250	0	0
350	470	1040	0	0	1080	0	0
320	350	700	0	0	1020	0	0
410	360	380	0	0	1130	0	0
350	430	450	0	0	950	0	0
390	350	390	0	0	860	0	0
370	350	430	0	0	1050	0	0
290	320	430	0	0	860	0	0
240	320	470	0	0	1080	0	0
330	350	500	0	0	950	0	0
290	260	450	0	0	1090	0	0
500	390	600	0	0	930	0	0
280	500	500	0	0	1050	0	0
350	300	690	0	0	890	0	0
430	260	890	0	0	820	0	0
670	500	900	0	0	890	0	0
420	850	470	0	0	1060	0	0
290	420	460	0	0	970	0	0
390	460	450	0	0	1110	0	0
470	410	690	0	0	770	0	0
670	450	480	0	0	880	0	0
440	360	400	0	0	1030	0	0
420	580	760	0	0	1040	0	0
540	530	620	0	0	1010	0	0
470	840	420	0	0	840	0	0
540	770	500	0	0	1080	0	0
800	1000	630	0	0	1110	0	0
950	1460	1350	0	0	1160	0	0
940	1490	1090	0	0	1210	0	0
570	840	620	0	0	1090	0	0
700	820	590	0	0	1040	0	0
630	850	730	0	0	930	0	0
610	690	380	0	0	1010	0	0
740	650	340	0	0	1190	0	0
1180	900	330	0	0	0	0	0
380	1050	710	0	0	0	0	0
280	1610	620	0	0	0	0	0
300	880	240	0	0	0	0	0
720	600	360	0	0	0	0	0
1470	450	0	0	0	0	0	0
1310	410	0	0	0	0	0	0
1150	460	0	0	0	0	0	0
960	650	0	0	0	0	0	0
1150	430	0	0	0	0	0	0
730	390	0	0	0	0	0	0

500	500	0	0	0	0	0	0
670	450	0	0	0	0	0	0
550	0	0	0	0	0	0	0
770	0	0	0	0	0	0	0
670	0	0	0	0	0	0	0
620	0	0	0	0	0	0	0
530	0	0	0	0	0	0	0
510	0	0	0	0	0	0	0
780	0	0	0	0	0	0	0
440	0	0	0	0	0	0	0
600	0	0	0	0	0	0	0
550	0	0	0	0	0	0	0
500	0	0	0	0	0	0	0
440	0	0	0	0	0	0	0
430	0	0	0	0	0	0	0
400	0	0	0	0	0	0	0
380	0	0	0	0	0	0	0
370	0	0	0	0	0	0	0
500	0	0	0	0	0	0	0
460	0	0	0	0	0	0	0
410	0	0	0	0	0	0	0
310	0	0	0	0	0	0	0
860	0	0	0	0	0	0	0
280	0	0	0	0	0	0	0
270	0	0	0	0	0	0	0
970	0	0	0	0	0	0	0
630	0	0	0	0	0	0	0
410	0	0	0	0	0	0	0
490	0	0	0	0	0	0	0
420	0	0	0	0	0	0	0
230	0	0	0	0	0	0	0
320	0	0	0	0	0	0	0
570	0	0	0	0	0	0	0
470	0	0	0	0	0	0	0
510	0	0	0	0	0	0	0
440	0	0	0	0	0	0	0
420	0	0	0	0	0	0	0
570	0	0	0	0	0	0	0
410	0	0	0	0	0	0	0
600	0	0	0	0	0	0	0
460	0	0	0	0	0	0	0
680	0	0	0	0	0	0	0
640	0	0	0	0	0	0	0
570	0	0	0	0	0	0	0
600	0	0	0	0	0	0	0
500	0	0	0	0	0	0	0
510	0	0	0	0	0	0	0
590	0	0	0	0	0	0	0
580	0	0	0	0	0	0	0

440	0	0	0	0	0	0	0
460	0	0	0	0	0	0	0
650	0	0	0	0	0	0	0
630	0	0	0	0	0	0	0
620	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

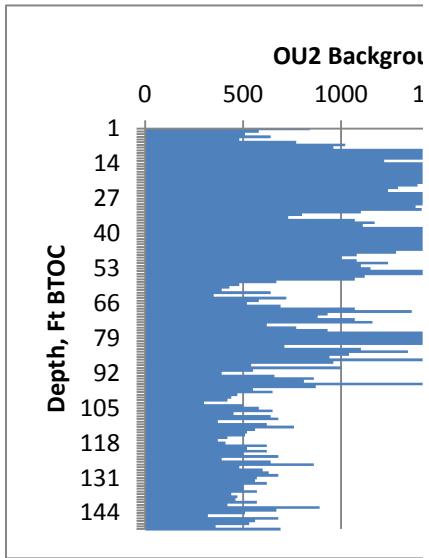
MW-102 CPM	D6 CPM	S61 CPM	D93 CPM	I9 CPM	S82 CPM	MW-103 CPM	PZ-304-AS CPM	PZ-304-AI CPM
1120	1540	1250	810	960	740	690	860	780
660	580	750	570	350	620	1180	950	1090
990	550	620	370	500	290	500	1240	1070
990	400	490	600	320	280	650	1260	1130
920	830	740	900	310	370	1300	1290	1390
1320	1180	1230	1300	1080	1520	2220	1930	1410
1250	1460	1690	1770	1090	1480	2030	2120	1680
1050	1450	1890	1870	1370	1580	1660	1820	1920
1200	1480	2460	1880	1110	1680	1520	1540	2030
1160	1440	2290	1760	1250	1480	1230	1780	1430
920	1350	1730	1650	1270	1610	1440	1570	1490
1240	1350	1490	1640	1870	1270	1280	1540	1380
1950	1110	1290	1580	1980	1690	810	1880	1290
2050	1190	1280	1590	1790	1210	1070	1530	1250
1730	1180	1160	1610	1650	1290	900	1710	1430
1340	1240	1180	1450	1160	1490	0	1420	1510
1060	1390	1070	1490	1160	1550	0	1090	1630
1110	1390	1010	1150	1150	1300	0	940	1210
1040	1210	910	1200	980	1230	0	960	1520
950	1200	1050	1070	990	1250	0	1220	1660
860	900	1160	1060	1030	1000	0	970	1420
0	980	910	1110	920	930	0	1280	1500
0	1050	880	1070	780	800	0	1260	1220
0	900	790	970	840	880	0	900	1110
0	1010	810	980	760	830	0	860	1180
0	1030	1030	890	890	880	0	700	1090
0	1200	870	970	910	640	0	740	1160
0	920	0	980	800	700	0	830	1400
0	1130	0	830	810	0	0	720	1090
0	880	0	800	780	0	0	580	910
0	1100	0	980	1030	0	0	590	990
0	1170	0	850	1030	0	0	0	1120
0	1130	0	1140	950	0	0	0	1020
0	970	0	930	1090	0	0	0	930
0	1010	0	840	1070	0	0	0	770
0	1060	0	720	840	0	0	0	940
0	890	0	660	680	0	0	0	1030
0	990	0	1010	820	0	0	0	860
0	1120	0	940	900	0	0	0	1060
0	1000	0	1130	760	0	0	0	820
0	810	0	1040	840	0	0	0	600
0	790	0	840	1010	0	0	0	660
0	880	0	890	870	0	0	0	920
0	750	0	760	920	0	0	0	500
0	880	0	810	780	0	0	0	880
0	760	0	780	830	0	0	0	690
0	920	0	910	910	0	0	0	750

0	1040	0	630	680	0	0	0	660
0	840	0	610	770	0	0	0	810
0	880	0	700	770	0	0	0	790
0	1120	0	780	940	0	0	0	650
0	820	0	720	890	0	0	0	750
0	880	0	590	980	0	0	0	920
0	1070	0	770	870	0	0	0	850
0	990	0	820	1010	0	0	0	0
0	850	0	830	810	0	0	0	0
0	1170	0	880	860	0	0	0	0
0	920	0	940	770	0	0	0	0
0	940	0	1060	870	0	0	0	0
0	1010	0	910	950	0	0	0	0
0	950	0	0	760	0	0	0	0
0	730	0	0	960	0	0	0	0
0	850	0	0	730	0	0	0	0
0	800	0	0	790	0	0	0	0
0	670	0	0	830	0	0	0	0
0	860	0	0	830	0	0	0	0
0	850	0	0	870	0	0	0	0
0	870	0	0	1060	0	0	0	0
0	610	0	0	770	0	0	0	0
0	810	0	0	700	0	0	0	0
0	980	0	0	870	0	0	0	0
0	790	0	0	740	0	0	0	0
0	900	0	0	770	0	0	0	0
0	990	0	0	810	0	0	0	0
0	950	0	0	750	0	0	0	0
0	940	0	0	880	0	0	0	0
0	870	0	0	850	0	0	0	0
0	830	0	0	950	0	0	0	0
0	970	0	0	930	0	0	0	0
0	960	0	0	900	0	0	0	0
0	1120	0	0	920	0	0	0	0
0	890	0	0	810	0	0	0	0
0	1030	0	0	890	0	0	0	0
0	1030	0	0	1010	0	0	0	0
0	920	0	0	890	0	0	0	0
0	1090	0	0	1190	0	0	0	0
0	960	0	0	880	0	0	0	0
0	1090	0	0	960	0	0	0	0
0	870	0	0	1010	0	0	0	0
0	1070	0	0	850	0	0	0	0
0	730	0	0	950	0	0	0	0
0	970	0	0	820	0	0	0	0
0	810	0	0	1050	0	0	0	0
0	830	0	0	1140	0	0	0	0
0	1040	0	0	1040	0	0	0	0
0	870	0	0	960	0	0	0	0

PZ-303-AS CPM	LR-105 CPM	LR-100 CPM	PZ-302-AI CPM	PZ-302-AS CPM	D81 CPM	MW-104 CPM	PZ-101-SS CPM
800	960	880	850	760	1030	520	740
990	1060	650	1430	1150	430	570	480
1020	1120	1010	1220	1100	330	630	310
1340	1050	1190	1250	1200	180	720	480
1020	1020	1070	1440	920	530	1080	560
1700	1230	1390	1870	1360	710	1740	460
1450	1860	1010	1960	1580	1160	2690	480
1710	1430	770	1910	2010	610	2530	520
1590	1230	660	1580	1850	750	1960	510
1480	890	750	1640	1810	1370	1540	550
1400	290	910	1650	1770	1590	1360	490
1330	350	960	1380	1350	1360	1200	470
1670	540	700	1750	1130	1190	1300	630
1550	570	530	1880	1130	1370	910	1760
1630	600	680	1900	1280	1270	1070	2070
1110	930	760	1840	1280	1060	1080	1260
1040	640	1050	1490	1320	1220	1090	890
850	780	590	1480	1380	1140	1020	980
1030	650	840	1520	970	1260	990	990
780	380	1010	1650	990	980	1130	1210
1230	500	870	1400	970	980	0	1500
1040	1310	530	1080	970	840	0	1550
810	1700	280	1320	990	740	0	1780
940	1060	540	970	830	850	0	1460
600	610	580	1120	900	970	0	1640
720	590	310	800	1020	840	0	1450
710	310	300	810	0	910	0	1600
840	250	980	890	0	870	0	1250
610	300	0	750	0	1100	0	1320
0	320	0	1400	0	870	0	1040
0	510	0	710	0	830	0	650
0	0	0	690	0	1010	0	430
0	0	0	600	0	980	0	410
0	0	0	720	0	990	0	710
0	0	0	790	0	1170	0	460
0	0	0	700	0	1340	0	330
0	0	0	820	0	1170	0	360
0	0	0	510	0	1680	0	310
0	0	0	690	0	1460	0	430
0	0	0	740	0	1140	0	430
0	0	0	710	0	720	0	340
0	0	0	570	0	920	0	310
0	0	0	560	0	1270	0	350
0	0	0	690	0	1110	0	420
0	0	0	1020	0	1030	0	490
0	0	0	800	0	1210	0	470
0	0	0	0	0	890	0	430

0	0	0	0	0	0	0	900
0	0	0	0	0	0	0	690
0	0	0	0	0	0	0	760
0	0	0	0	0	0	0	880
0	0	0	0	0	0	0	760
0	0	0	0	0	0	0	760
0	0	0	0	0	0	0	760
0	0	0	0	0	0	0	730
0	0	0	0	0	0	0	680
0	0	0	0	0	0	0	590
0	0	0	0	0	0	0	510
0	0	0	0	0	0	0	550
0	0	0	0	0	0	0	550
0	0	0	0	0	0	0	620
0	0	0	0	0	0	0	900
0	0	0	0	0	0	0	490
0	0	0	0	0	0	0	510
0	0	0	0	0	0	0	1110
0	0	0	0	0	0	0	880
0	0	0	0	0	0	0	690
0	0	0	0	0	0	0	600
0	0	0	0	0	0	0	900
0	0	0	0	0	0	0	580
0	0	0	0	0	0	0	530
0	0	0	0	0	0	0	610
0	0	0	0	0	0	0	750
0	0	0	0	0	0	0	810
0	0	0	0	0	0	0	510
0	0	0	0	0	0	0	400
0	0	0	0	0	0	0	610
0	0	0	0	0	0	0	590
0	0	0	0	0	0	0	900
0	0	0	0	0	0	0	520
0	0	0	0	0	0	0	700
0	0	0	0	0	0	0	600
0	0	0	0	0	0	0	520
0	0	0	0	0	0	0	570
0	0	0	0	0	0	0	540
0	0	0	0	0	0	0	590
0	0	0	0	0	0	0	600
0	0	0	0	0	0	0	370
0	0	0	0	0	0	0	310
0	0	0	0	0	0	0	440
0	0	0	0	0	0	0	380
0	0	0	0	0	0	0	580
0	0	0	0	0	0	0	630
0	0	0	0	0	0	0	670
0	0	0	0	0	0	0	1220
0	0	0	0	0	0	0	830

0	0	0	0	0	0	0	600
0	0	0	0	0	0	0	410
0	0	0	0	0	0	0	670
0	0	0	0	0	0	0	470
0	0	0	0	0	0	0	250
0	0	0	0	0	0	0	0



PZ-102-SS CPM	PZ-103-SS CPM	PZ-104-SS CPM
540	840	650
510	580	600
1040	510	970
850	640	970
1180	480	1360
1610	770	1120
1870	1020	1330
1910	960	1340
1570	1690	1100
1760	1920	1190
1600	1910	1210
1460	1590	1040
1730	1220	1220
1410	1670	1310
1400	1670	1060
1300	1820	1060
1470	1920	1150
1600	1810	1370
1560	1770	1360
1440	1650	1270
1250	1430	1470
1270	1390	1540
1380	1290	1070
1100	1240	1300
1110	1460	1340
1290	1420	1150
1430	1630	1010
1490	1420	1230
1410	1580	1170
1470	1380	1290
1310	1410	1220
1230	1100	1220
1380	800	1240
1300	730	1040
1010	1070	1050
1220	1170	1020
1050	1110	1420
1220	1710	970
1400	1560	830
1400	1750	1240
1290	1870	1140
1070	2010	600
1010	1770	780
1240	1790	810
1210	1710	950
920	1740	980
840	1280	590

870	1080	450
880	1000	450
920	1080	1210
1040	1240	1110
930	1100	420
770	1150	320
690	1730	400
840	1480	340
680	1120	420
690	1070	410
940	670	560
680	480	690
1040	430	480
670	390	550
800	640	590
660	350	300
600	720	580
530	580	520
570	520	680
490	690	730
670	1070	530
570	1360	620
750	930	830
900	880	340
560	1070	340
820	1160	490
800	620	530
1070	770	500
940	930	740
1450	1940	560
1530	2770	600
560	2940	600
390	3640	480
470	1880	730
870	710	650
970	1100	1080
1090	1340	1190
560	1040	640
590	940	570
1610	1980	650
2210	960	620
1760	540	490
940	1000	830
730	550	990
950	390	850
760	660	870
830	860	620
0	810	820
0	1430	940

0	870	820
0	550	570
0	650	960
0	470	1250
0	440	580
0	420	710
0	300	890
0	500	410
0	580	720
0	650	1280
0	450	650
0	640	1030
0	680	930
0	370	780
0	620	550
0	760	670
0	560	530
0	520	520
0	510	600
0	420	380
0	370	590
0	410	640
0	620	610
0	520	700
0	620	790
0	500	670
0	680	880
0	390	880
0	640	500
0	860	460
0	480	530
0	600	290
0	630	380
0	680	360
0	570	630
0	560	510
0	620	600
0	500	260
0	500	330
0	570	330
0	440	520
0	470	390
0	460	360
0	570	450
0	420	540
0	890	410
0	670	0
0	510	0
0	320	0

0	680	0
0	560	0
0	530	0
0	360	0
0	690	0
0	0	0

und Well PZ-103-SS: Gamma, CPM

1500 2000 2500 3000 3500 4000

